TER AND SEWERAGE SYSTEMS IN INDIANA

THE PLANNING OF FUTURE CONSTRUCTION NOW

By
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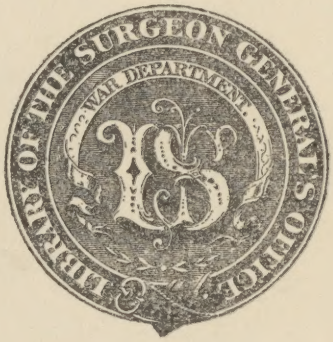

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The authors owe a particular debt of gratitude to Mr. Quinn and to Lewis S. Finch, Chief Engineer, Indianapolis Water Company, formerly Chief Sanitary Engineer, Indiana State Board of Health, and later head of a firm of consulting engineers, for their untiring assistance with technical matters. Their painstaking, minute examination and friendly criticism of the manuscript during its preparation in the light of their extensive first-hand experience with the practical problems of water and sewerage systems have contributed to the useability by municipal officials and students of municipal government of the materials presented here.

Others whose comments have been useful are: R. B. Wiley, Head of the School of Civil Engineering, Purdue University, and H. S. Morse, Vice President, Indianapolis Water Company, both former directors of the American Society of Civil Engineers; W. A. Hanley, Director of Engineering, Eli Lilly Company, former President of the American Society of Mechanical Engineers. Financial aid for travel and other research costs was supplied by the Graduate School of Indiana University. Also the authors wish to acknowledge the careful work of Miss Maxine Stapp (now, private first class, United States Army) in the collection and preparation of materials, particularly, for chapter VIII.

September 12, 1944

J.E.S.
P.S.S.

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A PREVIEW

Signposts to Aid the Busy Official

This study has been prepared for readers with varying interests, such as students of municipal law, administrators of public health programs, municipal officials, state legislators. Particularly, the authors have had in mind busy municipal officials. We have striven to provide assistance to such policy formers so that they might be more able to decide whether there is need for investigating to see if a water or sewerage improvement is needed in their municipality and to know if they are likely to have legal authority to finance its construction. For their benefit we have referred to procedures to be followed in various cases, because such practical men do not want to make major decisions in a vacuum. They like to decide whether to act or not after they know the need, whether they have the necessary financial ability and authority, what the consequences of failing to act maybe, and what is to be gained through positive action.

Once the decision to act is made, the initiative passes to the technicians who must then work out the details and execute the plan, subject to the general supervision of the policy formers as exercised through administrative procedures. We have sought to give assistance to the technicians, the city attorney and engineer, in their function of giving advice to the policy formers at the stage when the question is: should a given project be considered. When that stage has been passed and the burden of further progress is transferred to the technicians, they will need to get assistance from their own professional associates, technical literature, such as statutes, court casts, and engineering journals and books. The function of these technicians as advisors at the policy forming stage will be discussed more in detail in Chapter VII.

Because of the varying interests which we have sought to serve, the organization of the material presented here has of necessity been different than if a single interest were to have been considered. This organization will be indicated in the following paragraphs.

Why Carry On Water Works and Sewerage Improvements

An attempt will be made to approach the problems of water and sewerage construction first in a general way and then to deal with more detailed aspects of the various sectors of the problem. In Chapter I will be discussed the over-all view of the municipality, its need for a backlog of public works as an aid to employment, the value of water and sewerage facilities as the basis of growth,

and the financial advantages of planning construction of these facilities.

Water Supply Problems

It will be found that there are three problems in water supply. The first involves the improvement of the quality of water being used. The water supplied may be quite free from dangerous microbes but contain excessive amounts of iron; it may be extremely hard; or it may be definitely unsafe and positively dangerous to persons using it. In the second place, many municipalities have water plants, but water is not available to large numbers of the population living within the corporate limits or just outside. Here the improvement needed is extension of existing distribution facilities. In the third place, there is a surprisingly large number of populated places, most of which are incorporated, which have no public water supply whatever. This situation calls for new construction. The detailed examination of the need for water improvements, both present and potential, will be pursued in Chapter II pp. 15-19.

The Need for Sewers and Sewage Treatment Plants

The need for sewers, discussed in the same chapter, pp. 19-21, is found to be three-fold: first, extension of present systems because more than seventeen per cent of the population living in municipalities with sewers are not served by them; second, the construction of new systems where none are now in existence, since there are more than 200 incorporated places which have no sewers; and third, the repair of present systems and the construction of relief sewers to increase the capacity of overloaded existing sewer systems.

There is also a problem of providing for water and sanitary services for built-up but unincorporated communities. This will be referred to at pp. 21f.

The need for sewage treatment plant construction is great, whether considered from the standpoint of the number of places with no treatment plants, which includes some of the larger cities of the state, the amount of pollution in the streams, or the degree of overloading in the existing plants. This subject will be elaborated in Chapter II pp. 22-26.

Financial Capacity of Municipalities

While no final answer can be given in this pamphlet to the question of whether Indiana municipalities are financially able to build the improvements which they need, the general financial status of cities and towns as shown by their indebtedness as com-

pared to their net assessed valuation will be examined in Chapter III pp. 27-28. It will be seen from this investigation that cities are fully as able financially to enter upon construction programs as they were twenty years ago, and perhaps even more able.

Legal Methods of Raising the Money

Practical-minded officials, once they learn the need for construction and that it is economically possible to pay for it, will want to know what the legal ways are to raise the money. These ways will be discussed in Chapter IV. It will be shown that there are ways to separate the preliminary expenses from the final construction costs. In cases where this is desirable, a municipality may have three choices to raise money for preliminary expenses, (1) taxation, (2) borrowing, and (3) revenue from plants in operation, Chapter IV, part 1. If there is no desire to separate the two, preliminary and final construction costs, then the methods of raising money may be found in the general act authorising cities and towns to build and operate water and sewerage projects or in the special statutes enacted to enable municipalities to provide such services. Since most municipalities have exhausted their power under the general act, they must find authority in the special acts. The second part of Chapter IV is devoted to a digest of a few of the numerous special acts, the ones under which attorneys, officials, and engineers have proceeded most frequently in building water and sewerage works.

How to Start

Of particular interest to those officials responsible for initiating action looking toward the construction of water works and sewerage facilities, is Chapter VII, "Suggestions for Getting Started."

Legal Background

For students of municipal law, and others interested in securing a broader perspective of the background material, the general problem of the legal authority of municipalities to construct the improvements under consideration will be taken up in Chapters V and VI. In Chapter V, it will be shown that cities and towns in Indiana exist and exercise authority solely under powers granted to them by the state legislature. Therefore, the powers of municipalities are to be found in the statutes enacted by the General Assembly from time to time. The basic law is that of 1905 in which cities and towns had their status set forth and their powers comprehensively defined. With reference to the improvements being considered in this study,

cities and towns were given power to secure a supply of water by several different methods, such as (1) municipal ownership and operation, whether by acquisition of existing plants or by construction of new plants; (2) the municipal purchase of stock in a private corporation; (3) the granting of a franchise to a private individual or corporation to supply water; (4) or the lease of a privately owned plant by the municipal corporation. The power to provide for sewers and sewage treatment plants was also given by this act. This latter power has been exercised largely by the municipalities engaging in the construction and operation of the systems themselves.

All of these powers, however, must be understood in the light of subsequent legislation some of which will be seen to be amendatory, or supplemental to the basic act. Other legislation limits to some degree the manner of the exercise of the powers once a municipality has determined to provide itself with water or sewers. These limitations are established by conferring powers on the State Board of Health and the Stream Pollution Control Board, to establish minimum standards for water supply and the maximum amount of pollution permitted in streams and lakes, pp. 57-59.

The general legal authority for raising money is provided by the Act of 1905. This will be taken up in Chapter VI. As the chief methods provided in that act were borrowing on the general credit of the municipalities and securing funds through taxation, it will be necessary to examine the constitutional restrictions relating to borrowing and the statutory and administrative restrictions with regard to the amount of taxes municipalities may levy.

Constitutional Limitation on Debts

It will be seen, pp. 61-64 that while the constitutional limitation on the power to borrow is binding, several ways of borrowing money to make the improvements under consideration here have been found—ways that are not subject to the restriction as it appears in the constitution—which permit borrowing additional amounts. The five ways of increasing the borrowing power of a community which will be pointed out in pp. 62-64 are: the issuance of revenue bonds, secured by the income to be obtained from the operation of the works built with borrowed funds, the sale of bonds which are to be retired by payments by benefiting property owners, the creation of special taxing districts, and the use of lease-purchase contracts. These methods of borrowing money permit municipalities to consider improvements on their merits. If they decide in favor of con-

struction, it then becomes the problem of legal advisors to find the proper means to finance the project.

Restrictions on the Power to Tax

While the power is given to levy taxes, which necessarily includes the power to provide funds for building, the legislature has set tax rate ceilings of two kinds, those levied for corporate purposes and the over-all rates which may be levied for all purposes. It will be seen pp. 67f, that cities and towns have the authority to include in the tax rate a levy to build up a fund to finance later building. The way is also open for the State Board of Tax Commissioners to approve such levies. However, if this is to be done, municipal budget makers must take the initiative by including in the levy a sum to establish a building fund since no reviewing body is given authority to increase the levy originally made by the municipal officials. The burden for action rests with municipal officials in the first instance.

Similar to the administrative controls over the levy of taxes is administrative control over the amounts which may be borrowed and the wisdom of each particular bond issue. The circumstances of this type of supervision will be shown on pp. 68f. There are other limitations which cities must observe. These may be summarized by saying that since cities and towns are the creations of the state legislature and have only the power granted to them by law, they must observe carefully the powers granted. This is true particularly with regard to choosing the statutes under which they wish to operate or in the spending of money, because the State Board of Accounts makes periodic checks of all expenditures to determine their legality, p. 70.

Statistical Data Regarding Indiana Municipalities

An alphabetical list of all cities and towns in the state is appended, along with which is such factual information as location, population, and elementary data with regard to water, sewers, treatment plants, bonded indebtedness, and assessed valuation of each city or town.

I

FROM WAR TO PEACE

The transformation of our industrial machine from peace-time production to the making of guns has been on a scale to amaze ourselves and confound our enemies. The time for large scale reconversion is not yet in sight, but persons in positions of responsibility have shown evidence that they already see the need for planning now for the day when goods for human consumption, rather than human destruction, will again come off the assembly lines. Each level of government played its part in the process of conversion; each must plan for reconversion. Opinions differ on the question of what the economic situation will be after the war. On the one hand there are those who contend that private industry will flourish and that there will be no need for public works projects to furnish employment. There are on the other hand those who contend that, at least during the period of transition, it will be necessary for government to promote and finance useful works in order to assure continual full employment.

It is not the purpose here to enter the lists on either side in that debate. Whether there is depression or prosperity there is public work which is essential to the health and general welfare of the community. It is the purpose of this monograph to set forth the need for the construction of water systems, sewers, and sewage treatment plants and to indicate the general legal powers and financial abilities of Indiana cities and towns to construct such projects. Armed with this information local officials will be more able to plan wisely for their share of the reconversion. If it happens, as some prophesy, that there will be need for public works to support employment, plans can be ready; but on the other hand, if private industry proves itself able to carry the burden, these needed improvements can nevertheless be made in a systematic order.

It may be observed at the outset that there is a surprising volume of this kind of construction needed, as shown by figures collected by the Indiana State Board of Health and published by it and the Cincinnati Station of the United States Public Health Service. It may also be pointed out that there are a great many advantages to municipalities in embarking on a building program to construct and/or extend water systems, sewers, and sewage treatment plants.

In the first place, these improvements, especially the securing of an adequate water supply, are absolutely essential for growth and a contented citizenry. Vast amounts of water are used in many manufacturing processes; consequently, industrialists looking for new sites will need to be assured of an abundance of satisfactory water. The amount of water consumed domestically per capita is often cited as a rough test of the health and living standards of a community. People may not be attracted to a city or town which has insufficient or unsafe water, or whose distribution system does not make water available in all parts of the corporation or whose water is hard or corrosive. Unhappy are the city officials and restive are the citizens of a city or town in which there is a lack of water to maintain lawns, flowers, and gardens through the hot, arid days of summer, or in which apologies must be made for the stinking streams filthy with untreated domestic or industrial sewage.

A second advantage accruing to a community is that the improvements under discussion here are exceptional from the standpoint of their financing. They may be built and paid for without any direct increase in the tax levy; they may be built without a visible increase of the direct indebtedness of the civil town or city; and their operation may be profitable in some cases. Furthermore, they may be planned now, and constructed at a time when the municipality might but for that construction have a long list of persons on the relief rolls.

A third advantage of a program of this kind is that efficient water, sewer, or sewage treatment systems promote savings in other areas of the municipal governments or among their citizens. Money paid for water softening may be saved, and with interest, in reduced soap and plumbing bills. An ample water supply is an important factor in fire protection. In fact, in a widely used grading scale water supply is the most heavily weighted factor, being 1700 out of a total of 5000 points. The factor for the fire department itself is only 1500 points. Since insurance rates depend largely on classification based on this scale it is easy to see that a good water supply may save much in insurance premium payments, as well as in actual losses from fire.

II

THE POTENTIAL DEMAND FOR WATER AND SEWERAGE FACILITIES

Water Works

Safety of public water supplies

The condition of water supplies is subject to many gradations depending upon the purpose for which the classification is established. In the first place, water must be safe for human consumption, as determined by the standards of the State Board of Health. These standards are based upon the elimination of possible bacteriological contamination and harmful minerals. There are four towns in Indiana whose water supplies are listed as "unsafe" by the State Board of Health.[1] They are English, with a 1940 population of 757; Hazelton, 516; Marengo, 812; and Milan, 1000; a total in the four places of 3185. There is nothing in the report to indicate that they contemplate making changes, despite an order in three cases and a recommendation in the fourth by the Board of Health that the water be treated. The doubtful character of the water in these towns has been a matter of record for a considerable time. For example, these towns, along with other municipalities were listed in 1927 as having questionable supplies.[2] Each of these towns owns it water supply system, with the exception of Marengo; there, the water plant is privately owned. The powers, legal and financial, of the municipalities to deal with the situation will be referred to in later paragraphs.

a. unsafe supplies

b. questionable supplies

There are 19 other incorporated places which are placed in the questionable classification by the Board of Health for the year ending June 30, 1942.[3] These 19 places have a total population of 17,560.

Water hardness

A second criterion for grading or classifying water is the degree to which iron and other mineral substances which cause hardness and which foul pipes and plumbing are present. The extent of improvement which might be made in this re-

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[1] *Yearbook of the State of Indiana,* 1942, p. 494; hereafter cited as *Yearbook;* this report is also published separately and may be obtained from the Indiana State Board of Health, Division of Environmental Sanitation.

[2] *Annual Report of State Board of Health of the State of Indiana* for fiscal year ending September 30, 1927, p. 28; also see *Yearbook,* 1934, p. 844; 1936, p. 656; 1937, pp. 551f; 1938, pp. 733f; 1939, p. 669; 1940, p. 909; 1941, p. 548; 1942, p. 494.

[3] *Yearbook,* 1942, p. 493. See Tables in Chapter VIII for the names of these places.

spect is no doubt considerable. For example, there are 915,000 people who use ground water from public supplies, but more than one half of them (521,009) are reported to be using water which has been neither softened nor had iron removed from it. These 521,009 people live in 118 places. There are in addition to them nearly 200,000 people living in 37 places who are using water that receives no treatment of any kind. There are, of the total population using ground water, only 46,000 (45,662) living in 12 places who are privileged to use water which has been subjected to iron removal, softening, and chlorination.[4] It may be that not all the public supplies of ground water require softening. Much information as to the degree of hardness is to be found in an analysis of the ground water supplies which has been made by the Division of Environmental Sanitation of the State Board of Health. Under the date of March, 1943, this analysis was published (processed) in Bulletin S.E.10. This bulletin contains the name of each place with a ground water supply system, its population, ownership of the water system, and with few exceptions, the following additional information: source of supply, including type, depth, and size; soil formation, treatment, maximum pumpage, number of gallons per minute, storage capacity, and the chemical characteristics of the water, which include total iron, chlorides, total alkalinity, total hardness, hydrogen-ion concentration, flourides, total solids, and sulphates.

Obviously, there is a considerable shelf of employment in the cities and towns of the state in improving water supplies which while of safe quality are highly mineralized. Making this potential work a reality will depend in part on the desire of the citizens of the several local communities to secure a better grade of water in terms of mineral content.

Availability of water to residents

a. inside corporate limits

The availability of water to the whole population living within the municipality is a third factor in determining how satisfactory existing water supplies are. In one place where a public system has been installed somewhat recently, the lines did not reach all the residences within the corporate limits. This is said to be typical except in communities long static. Tabulations compiled by the United States Public Health Service show the population served in the places having water treatment plants.[5] From this tabulation it appears that water systems are fairly adequate in many such

[4] *Yearbook,* 1942, p. 482.

[5] Vernon G. MacKenzie, *Water Treatment Plants, State of Indiana,* (processed by the U. S. Public Health Service, Cincinnati, Ohio, 1941.)

cases to reach substantially all the population; however, there is a total population in these places of 139,817 which is not publicly supplied. This figure is found by subtracting the number served by each system from the population of the corporation as shown by the 1940 census. However, the statistics on this point are not complete. The incompleteness of the statistics is seen when it is recalled that the above mentioned tabulations are only for the places having water treatment plants, and, according to the Indiana State Board of Health report, there are about 151 places having public water supplies that do not have any treatment plants.[6] It might be worthwhile for the State Economic Council or the State Board of Health to compile figures to see what the situation is, and if the figures cannot be compiled from sources already available, to circularize these towns and cities to find if there is need for extension. One man who has had wide experience in Indiana with water works both as a public sanitary engineer and as a private consultant is of the opinion that probably 20 to 25% of the people living within the cities and towns having public water supplies make no use of the water. Some do not use it from choice, in his opinion, and others because it is not available.

b. outside corporate limits It may be pointed out also that there may be a potential demand for water from a public supply by people living near but not inside of the municipal limits, which would justify extension of existing water systems. For example, Bloomington is listed by the census as having 20,870 population, but its water supply, according to the Health Service, is used by 25,000 people.[7]

Many extensions to adjacent territory were made during the period when the federal funds were available. The financial arrangements in one case made between the city and the water users in the area outside the corporate limits served by the extension provided that the users were to bear one half of the cost of materials used in laying the main, but that these persons were to be reimbursed from the water revenues collected in the area. Federal funds were used to pay the labor costs.

However, since federal funds are no longer available, a much less liberal policy has been adopted by that city. Arrangements for the extension of water lines beyond the city limits are to be made subject to the following conditions: The potential user must bear

[6] *Yearbook,* 1942, pp. 487-492.

[7] The situation in Bloomington may not be typical due to the presence of the state university and its student body. .

the expense of installing and keeping in repair the line from the city limits to his premises and pay a fee for tapping the line. He then is entitled to water at the regular city rate.

It may be noted, in passing, that cities and towns are authorized, particularly in an Act of 1933, to extend such services beyond their corporate limits. This provision is:[8]

> Any municipality shall have the power . . . to construct and operate a utility, or any part thereof, in said municipality or within six miles beyond the limits thereof.

And action taken under the provisions of this act frees the municipality from the supervision of the Public Service Commission.[8a]

Populated places with no public supplies

One of the apparent blind spots in the water supply picture is the number of places having no public water supply system at all. There are approximately 195 such incorporated places with a total population of 78,556.[9] The individual places range in size from Aladdin, which has a population of 17 to Hymera, with a population of 1298. Four of these places have a population of more than a thousand.

It may be suggested that many smaller places do not need public water systems. It would seem that, omitting all considerations of convenience which should be left to the judgment of each local community, the actual need from the standpoint of health would be somewhat dependent on the environmental situation, among other things. For example, a story often told by older residents of Bloomington, Indiana, and corroborated in the present state health officers' biography of his predecessor illustrates the danger to which ground water is subjected. It also illustrates Doctor Hurty's methods for dramatic proof.[10]

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[8] Acts of Indiana 1933, ch. 190, sec. 13, p. 928; all Indiana Acts will hereafter be cited as Acts. Burns Annotated Statutes of Indiana, 1933, sec. 54-607; hereafter to be cited as Burns.

[8a] Acts 1933, ch. 190, sec. 16, p. 928; Burns 54-610. A provision of another statute, (Acts 1915, ch. 123, sec. 1, p. 528; Burns 48-7207) requires permission of the Commission to extend the service beyond the corporate limits. Presumably this provision is still in force except when municipalities act under the authority of the Act of 1933, although the Public Service Commission has been inclined to view the Act of 1933 relieving it from supervision in such cases.

[9] See a corroborative statement by H. W. Streeter, and Ray Rancri, "National Inventory of Needs for Sanitation Facilities," in *Public Health Reports,* Vol. 59, No. 1, pp. 9-10, January 7, 1944.

[10] Thurman B. Rice, "The Hoosier Health Officer, A Biography of Dr. John N. Hurty," *The Monthly Bulletin,* Indiana State Board of Health, Vol. XLV, No. 3, March 1942, at p. 62; hereafter cited as *Monthly Bulletin.*

> One of Hurty's ace plays was to come up to the town pump and get a crowd about him while he explained the dangers of such supplies. On one occasion he stopped before the town pump at Bloomington which stood at the southwest corner of the public square. He gingerly sniffed at the sample of water which he had pumped up and roundly denounced the well as being unsafe. A loafer took up the argument and said that it was "clear, cool and sparkling" and had a pleasant taste to those who had learned to like it. These qualities are danger signs, however. Hurty went to the City Hall and got a plot of the sewers in the town. He found that one of the sewers ran very near the well. Then he went to a drugstore and got some fluorescein which he put into proper solution after which he poured this green dye into the urinal of the men's toilet in the Courthouse. An hour or so later the "excellent well" (sic) was putting out water as green as ink.

This section dealing with the construction, extension, and improvement of water supplies may be closed with a reference to the map of the Indiana Public Water Supply Development Program reproduced in this monograph at p. 49 through the courtesy of the Indiana State Board of Health. It will be seen from an examination of this map, not only that much may be done, but that much is proposed to be done.

Sewers

Need for extension of existing sewers

The possibilities for the extension of sewer systems are greater than for water systems. According to the U. S. Public Health Service compilations, the sewer systems in existence fail to serve a large segment of the population in the places having them.[11] The report shows the number of people in each city or town served by sewers in 1941. Based upon this compilation, which used 1930 census figures, there were more than 276,000 persons living in places having sewers but not having sewer service. When the 1940 census is used the population living in the places listed but not served by sewers is found to be 366,748. Still using the 1940 census, there are no sewer connections for 17.59 per cent of the population in places having sewers. It might be impracticable to extend sewers to make them available to all the population living within the corporate limits of each city or town, but no doubt there are some extensions which could well be undertaken.

In incorporated places

A great many incorporated places have no sewers at all. The Public Health Report lists about 280 incorporated places as having

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[11] Vernon G. MacKenzie, *Sewer Systems and Sewage Treatment Plants, State of Indiana,* (processed by U. S. Public Health Service, Cincinnati, Ohio, 1941.)

sewers out of a total of more than 530 incorporated cities and towns in the state. This does not mean that there are quite 250 places which have no sewer service, however, since there are a few places, e.g. Woodruff Place, an incorporated town entirely surrounded by the city of Indianapolis, which uses the Indianapolis sewers. And it may also be observed that it is probably not practicable for every place to have a sewer system because of the small number of people, or because the population is spread out over a large territory. Furthermore, factors such as the character of the subsoil and the source of the drinking water would probably be important.

The contamination of drinking water as a result of insanitary disposal of human excreta was once illustrated by the ubiquitous Doctor Hurty. He had noted that a large number of cases of typhoid fever were occurring in a certain area. After investigation he concluded he could publicly demonstrate the source of the disease by pouring "coal oil" into the "outhouses." When it "showed up" in the water the people were drinking, his point was made. It has been said that this incident may have been a factor in his appointment to the office of Secretary of the State Board of Health.[12]

It may be suggested in some quarters that there is a minimum population which a place must have before it becomes economically practicable to build sewers. It appears that the test of whether a sewer system is needed is to be decided by the degree of population concentration, the amount and character of industrial wastes, the nature of the subsoil, and the amount and type of sanitary construction available for the disposal of human excreta, rather than to substitute what appears to be an artificial test such as the number of people living within some legal but otherwise imaginary boundary. However, should the latter test be used because of its convenience, perhaps a population of 1000 could be agreed upon tentatively as the maximum number of people in a locality that may safely do without sewer service. It is certain that many places with a smaller population will desire sewers, since many already have so provided themselves. There are in fact six such places which already have sewage treatment plants as well.[13] If this figure is used, then there is a considerable amount of new sewer construction to be done. According to the Public Health Report referred to above, there are 17

[12] See a story by L. V. Rule in the Louisville *Courier-Journal,* September 5, 1920, as quoted by Dr. Thurman B. Rice, "The Hoosier Health Officer," ch. XVII, *The Monthly Bulletin,* XLIII, May 1940, p. 105.

[13] See Chapter VIII for the names and populations. A seventh place, Charlestown, is listed officially in the 1940 census as having a population of less than a thousand, but its population has increased far beyond that number as established by later official counts.

incorporated places in the state with a combined population of 26,622 which have no sewers.[14]

In addition to the need for extending present systems and constructing new ones, city officials and engineers frequently call attention to a third type of sewer construction, namely the repair of present systems and the construction of relief sewers. The age of much construction is such that it is time to be making plans for repairs. Likewise many extensions having already been made to main sewers, and there is often a serious condition of overloading. This situation calls for the planning of construction to relieve the overload wherever it exists.

Unincorporated places Reference has been made exclusively to incorporated places. However, unincorporated places need also to be taken into account. Whether or not a place has been incorporated in Indiana is entirely dependent upon the desire of the population living within the area, there being no minimum population necessary, outside of Marion County, for incorporation. There are consequently very small incorporated places, Aladdin with a population of 17 being an example; consequently there are much larger built-up communities such as Bowling Green in Clay County, Waynedale in Allen County, and Arlington in Monroe County, with populations numbering in the hundreds which are not incorporated.

The test as to whether such places need the kind of improvements under discussion here is not a legal one, that is whether they are incorporated, but rather a test of a physical character, the degree of the concentration of the population and the nature of the subsoil. It might also be pointed out that many of these built-up unincorporated places are within the environs of incorporated places. The first step in the solution of their sewer problems might well be annexation.

The fact that some of these unincorporated places might well consider the matter of becoming incorporated is attested by a bill which was introduced in the session of the legislature in 1943, but which failed to be enacted. This bill provided that townships should have the powers of a municipal corporation in establishing sewers. The purpose of the authors of the bill was to devise a method for Waynedale to construct and operate a sewerage system. By incorporating, such built up communities as Waynedale and Mulberry which wish to supply themselves with sanitary facilities or water could do so under the well developed powers and definitely pre-

[14] See Chapter VIII for the names and populations.

scribed procedures of towns and cities. While no effort can be made in this study to set forth the need for unincorporated places to establish such facilities, officials responsible for post-war planning could well consider the matter. It is our opinion that in some of these cases the solution is to be found in metropolitan planning which may include annexations rather than in the increase of municipal corporations on the periphery of large cities.

Sewage Treatment Plants

Existing plants The situation with regard to sewage treatment plants presents a great opportunity for useful construction. There are only 81 public sewage disposal plants in the state,[15] and while there may be "clear water ahead" in Indiana streams,[16] it is pretty far ahead and around at least one scum-covered bend in the river, for as of this date, some of our streams are cesspools, particularly in dry seasons when the flow is low,[17] and most of them are "sewer extensions."[18]

Recent construction There is some disposition to look more hopefully at the sewage treatment situation.[19] One factor which gives support to this optimism is the rapid rate of increase in the construction of sewage treatment plants in the decade immediately preceding United States participation in World War II. At least 38 of the total 81 plants in the state were placed in operation during the years 1934-1941 inclusive. No doubt this sudden spurt of building activity was stimulated in part by the easy availability of federal funds. If the rate of new construction is resumed when materials again become available, then there will be reason for optimism.

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[15] Martin Milling, "Progress of Sewage Treatment and Stream Pollution Abatement," *Monthly Bulletin,* XLVII, No. 9, September, 1943, p. 205; hereafter cited as *Bonthly Bulletin.* Also see *Yearbook,* 1942, pp. 505-507.

[16] Joseph L. Quinn, "Clear Water Ahead," *Monthly Bulletin, op. cit.,* p. 204.

[17] See *Yearbook,* 1940, p. 381. Reference is here made to the Ohio River. In order to improve navigation on the Ohio, the Federal Government has erected some 60 dams in it between Pittsburg and Cairo. "The result has been the creation of a series of 60 cesspools . . . back of these dams." See also *Monthly Bulletin, op. cit.,* p. 194, under Title "Our Cover."

[18] Thurman B. Rice, "History of Stream Pollution in Indiana," *Monthly Bulletin, op. cit.,* p. 201 and 217. Dr. Rice makes this statement: "after this date [1909] however, little or nothing was done to correct the increasingly bad conditions. Our streams were reduced for the most part to the state of sewer extensions, ugly, malodorous and utterly useless for fishing and other recreational purposes." Later in the article he alludes to some of the investigations and improvements made during more recent times and gives the impression, which other articles in that number of the *Monthly Bulletin* are also calculated to support that the streams have been purified materially.

[19] See Martin Milling, *op. cit.,* p. 205.

The whole history of sewage treatment plant construction may be summarized briefly to indicate the extent of the recent increase in construction. The first plants were put in operation in 1903; in 1920 there were 8, now there are 81. There are in addition 45 treatment plants for semi-public institutions and industrial wastes.[20] It has also been pointed out that there has been a corresponding rapid increase in the percentage of the urban population served by sewers. For example, Mr. Milling illustrated with pie charts how in 1920 only 1.8% of the urban population of the state was served by sewage treatment facilities whereas by 1930 there had been an increase to 23.5% and in 1940 to 59.7%.[21]

Inadequacy of present treatment

However, this optimistic outlook may be tempered by several qualifications. In the first place, these figures by themselves can be misleading. The United States census lists only those places having 2,500 population or more as urban. But from the standpoint of health, a smaller place dumping untreated sewage into a water course may also constitute a serious menace to health. When the total population of the state living within incorporated places is taken into account, the proportion being served by sewage treatment plants is 51.2% instead of the 59.7% as represented by the pie charts referred to above.

A second factor, which may qualify the more favorable aspects of the sewage treatment problem, is the status of the water level in the state. For some twenty years a program of investigation of the surface water flow has been under way. In some streams there has been a precipitious decrease. The White River at Muncie has shown a most marked change as is indicated by the following tabulation:[22]

Years	Cubic feet discharge per second
1923-27	376.6
1928-32	328
1933-37	217
1938-42	169

[20] Martin Milling, *op. cit.*, p. 205; it appears that there has been a decrease in the number of plants in use for semi-public institutions, since the number given in the *Yearbook* for 1942, p. 509 is 48, while the number in use as reported for September, 1943 is 45. The figures cited in these references of the population of the state served by treatment plants also support the view that a great deal of progress is being made.

[21] Martin Milling, *op. cit.*, p. 205.

[22] *Surface Water Supply of Indiana,* Department of Conservation, June, 1928 Publication No. 72, pp. 77-82 inc.; *Surface Water Supply,* Publication No. 112, 1935, pp. 61-63 inc.; unpublished documentary material, Department of Interior, United States Geological Survey, Water Resources Branch, 1931-1942 inc.

While this example does seem to be an extreme case, it gives support for the observation of persons who have commented on the amount of pollution. One official of the State Division of Geology said that there just does not appear to be enough water to carry the wastes away. In 1935 a program of observation of ground water supplies was undertaken jointly by the State Division of Geology and the Ground Water Division of the United States Geological Survey. At first little money was available, but subsequently, when the program was more adequately financed, much of the energy of the personnel in the water survey program had to be diverted to help certain municipalities find new supplies when their accustomed water supplies were exhausted. Consequently, no conclusion can be given with regard to the status of the ground water level. However, the evidence available from surface water surveys and from the preliminary surveys of ground water give rise to a serious question.[23]

Coupled with a probable decreasing water level is a third factor, the increase in both the urban population and the consequent enlarged volume of domestic and industrial wastes which are flowing into the water courses. It would seem therefore, that while there was an important step taken by the extensive construction of treatment plants during the 30's, it was only a step toward a goal which has in the meantime been moved farther away.

A fourth factor in the amount of stream pollution is the inadequacy of the treatment plants in operation; while it may be true that a large share of the domestic sewage is actually discharged into treatment plants, there is a question in many cases whether the effluent has beeen treated to a reasonably safe degree. For example, two plants built in 1903, one at Bedford and the other at Crown Point, do not provide an adequate degree of treatment. What is true of those plants is true of others as well, even, it is said, of some of the ones more recently constructed. In addition, many plants are seriously overloaded as a result of increased population, or because of the industrial wastes discharged into them. Other plants are overloaded for only parts of the year because of seasonal industries such as tomato canning. In summary, according to Mr. Milling of the State Board of Health: "Many of the plants should be replaced

[23] References to the preliminary findings may be found in United States Geological Survey *Water-Supply Papers,* Nos. 777, p. 60; 817, p. 43; 840, p. 69; 886, p. 95; 936, p. 20; also reports in the *Yearbooks* for example, 1938, p. 974; 1939, p. 887; 1942, p. 210; also see F. H. Klaer, Jr. "The Cooperative Ground Water Investigation in Indiana," *The Water Spout,* Vol. IV No. 1, March 1944, beginning on p. 14, (processed) Indiana State Board of Health.

with new plants; others need considerable repairs, and still others are overloaded and need to be enlarged."[24]

Lastly, the figures giving a general over-all view of sewage treatment fail to show the concentration of pollution in some regions. For example, the fourth largest city in the state, South Bend, has no treatment plant. It has a sewer system which serves 99,000 of its 101,268 population, consequently its domestic and industrial wastes are discharged untreated into the St. Joseph River. Likewise adjacent Mishawaka with a sewer system serving 24,500 of its 28,298 people and Elkhart 14 miles up the river with a sewer system serving 24,500 out of a population of 33,434, not to mention smaller places like Glenwood, all dump their sewage, untreated, into the St. Joseph River.

The total construction needed

The sewage treatment problem as viewed from the standpoint of the abatement of pollution is one of no mean proportions. It is likewise of considerable magnitude when approached from the standpoint of the number of places which could well construct plants. There are 280 places which have sewers; only 81 have treatment plants; the Secretary of the State Board of Health has said that "every city or town that has sewage must" put in a sewage treatment plant "sooner or later."[25] That means that there are approximately 200 places which need sewage treatment plants. In addition, as these places, not now having sewers, undertake sewer construction they also will be required to build sewage treatment plants. The potential total number of plants to be constructed is a large one. The extent of this problem and its relation to stream pollution and surface water supplies is depicted in the map, p. 50, reproduced through the courtesy of the Indiana State Board of Health.

It may be said by way of summarizing the need for sanitary construction that there is available in Indiana a sizeable amount of work to be done in the improving, extending, and construction of water, sewer and sewage treatment facilities. The work to be done here is vital to health, to convenience, and to aesthetics. It is of the kind that can be self-liquidating as will be pointed out below. There are small jobs and larger jobs, and still larger jobs which if used to take up employment lags can be undertaken in proportion to the amount of work needed. These jobs are wherever the people are, and most of this work can be divided into segments so that more of it can be

[24] Martin Milling, *op. cit.*, p. 205.

[25] Thurman B. Rice, "The Duties of the New Stream Pollution Control Board," *Monthly Bulletin, op. cit.*, p. 202.

added or it can be tapered off and stopped quickly as the need for work increases or decreases.

The necessity for technical advise Plans for such improvements, the specifications, the calculation of the amount of work involved, and estimates as to the cost of construction and operation provide particular tasks which the engineers of the corporations could well complete during the war period. The Economic Council (Indiana's planning agency) has been active in drawing the attention of municipal corporations to preparations for needed local improvements, and water works, sewers, and sewage treatment plants are a part of this picture. The Division of Environmental Sanitation of the State Board of Health is in more or less constant touch with all the municipal water plants, the information collected by it is available to the cities,[26] and its co-operation to the limit of its manpower could be confidently expected, and through the State Board of Health the technical knowledge of water and sanitary experts in the United States Public Health Service is available.[27] However, this assistance as will be explained below is not sufficient. Municipalities in most cases must make it possible for their engineers and their legal departments to have the aid of consulting engineers and specialized legal assistance as they proceed with their plans as will be indicated in Chapter VII.

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[26] For ground water supply data, see Indiana State Board of Health, Bulletin S. E. 10, March, 1943, "Data of Indiana Ground Water Supplies," (processed); also see the reports of the Bureau of Sanitary Engineering published in the *Indiana Yearbooks* beginning particularly with 1935, p. 641. The Indiana State Board of Health issues the following monthly publications in which discussions may be found of the general problems of water treatment, sewers, and sewage treatment; *Monthly Bulletin,* e.g. *Monthly Bulletin,* Vol. XXLVII, No. 9, September, 1943, p. 206; and *Sewage Gas,* a publication for sewage treatment plant operators which contains articles of special interest to them.

[27] Vernon G. MacKenzie, *Water Treatment Plants, State of Indiana,* (Processed by U. S. Public Health Service, Cincinnati, Ohio, 1941). For sewers and sewage treatment plant data see Vernon G. MacKenzie, *Sewer Systems and Sewage Treatment Plants, State of Indiana,* (processed by U. S. Public Health Service, Cincinnati, Ohio, 1941).

III

FINANCIAL ABILITY TO PAY FOR IMPROVEMENTS

Any discussion in this place of the financial capacity of the Indiana municipalities to make improvements must be somewhat superficial and unsatisfactory. In the first place whether or not a place can afford to pay for a given project is largely a matter of judgment, not of objective measurement. Secondly, although considerable objective data may be supplied upon which to base a judgment, a thorough collection and analysis of such data is beyond the limits of this study. Such data include, to mention only a few factors, the total industrial resources of each community, e.g., number and character of industries and industrial output, amount of employment; population characteristics, embracing sex, age distribution, degree of education; local governmental costs per capita; amounts of financial aid from the state and federal governments. Another study being conducted by one of the authors in which that and much additional data related to local governmental units, has been under way for three years and may not be completed for another year or two.[1]

Data needed

A superficial judgment as to the ability of a municipality to finance the construction or extension of water and sanitary facilities may be arrived at through a study of its net assessed valuation, overall tax rate, and direct and indirect bonded indebtedness. Chapter VIII contains an alphabetical list of cities and towns showing this for each city and town. A fuller knowledge for each municipality could be had from an analysis of the operating statement and balance sheet of any utility or utilities which it owns and would seem to be necessary when such place began a consideration of its capacities, but that is beyond the scope of this discussion.

Debts and tax rates

Some general observations may be made as to the general debt situation of cities. The total gross debts of cities,[2] including bonded indebtedness of both the civil and school units and the temporary loans is 4.69% of the total net assessed valuation. However, when

[1] Professor P. S. Sikes, the Bureau of Government Research, Department of Government, Indiana University, director of the study, has selected more than thirty major factors to find what the relative competence of each county and city or town is. These thirty factors embrace more than one hundred minor factors.

[2] 1942 *Statistical Report* of Indiana; these figures for cities correspond to the calendar year; for schools the fiscal year begins on August 1 and ends July 31.

only that part of the gross debt of the civil cities is considered, which for the purpose of this monograph is subject to the constitutional debt limitation, the bonded debt is 1.1% of the combined net assessed valuation. Although the revenue and special assessment bonds are not subject to the constitutional limitation, for purposes of comparison their relation to the assessed valuation is of interest. These debts amount to 2.2% of the net assessed valuation.

Trends in debts

The following table compiled from the *Statistical Report* for the years indicated gives an indication as to the kinds and trends in indebtedness for cities since 1922. In the earlier *Reports* debts were not classified in the same manner; consequently no attempt can be made to examine the debt burden previous to 1922.

INDEBTEDNESS OF INDIANA CITIES

	Civil City Indebtedness	School City Indebtedness	Special Assessment Indebtedness	Aggregate Indebtedness
1922	26,416,727.00	29,598,185.00	15,557,326.00	71,572,238.00
1923	30,549,955.00	34,830,046.50	NOT AVAILABLE	NOT AVAILABLE
1924	33,020,413.00	37,388,290.00		
1925	34,832,128.51	40,144,904.40		
1926	36,708,589.89	42,049,401.90		
1927	37,347,670.44	43,308,672.28		
1928	38,454,113.26	45,209,769.05		
1929	43,601,136.88	44,020,492.15		
1930	43,369,280.71	44,176,825.01		
1931	45,248,762.82	41,539,244.25	21,484,760.97	108,272,768.04
1932	46,305,917.41	39,447,312.83	30,580,636.78	116,333,867.02
1933	44,388,203.32	37,434,860.39	27,281,316.43	109,104,380.14
1934	43,799,178.63	35,328,462.73	23,847,932.36	102,975,573.69
1935	53,707,759.67	35,436,278.92	24,077,676.61	113,221,715.20
1936	54,828,527.75	33,814,764.23	20,798,686.44	109,441,978.42
1937	56,504,526.07	33,868,468.20	18,279,310.72	108,652,304.99
1938	58,368,180.57	34,025,734.32	17,186,153.15	109,580,068.04
1939	65,827,034.84	30,796,761.64	16,440,241.73	113,064,038.21
1940	68,178,047.41	28,663,479.12	14,778,787.71	111,620,341.24
1941	69,100,008.45	26,465,997.12	12,503,125.33	108,069,130.90

It will be noted that the total debt has not changed materially in the last decade. Indebtedness of civil corporations (column 1) has increased constantly except in three years, 1930, 1933, and 1934. School indebtedness showed a tendency to rise substantially during the period 1922 to 1930; but since the latter date it has tended to

decrease until now it is below 1922. Indebtedness to be amortized from special assessments has decreased substantially in the last decade. If the current figures were available they would probably show a further decline.

When the debt situation of the towns is considered, information available, particularly for the last decade, is spotty. However, the debt picture as portrayed in the *Statistical Report* shows that the total indebtedness of towns, including school town debts and temporary loans amounts to 2.7% of the assessed valuation. The general obligation indebtedness amounts to .19% of the assessed valuation; while revenue bond indebtedness amounts to 1.63% of the assessed valuation.

Ability in general

It is said that city officials themselves feel that cities are unable to undertake the financing of a public works program to ease employment resulting from either reconversion after the war or from current cancellation of war contracts.[3] Evidence of their inability, it is urged, is that most cities are indebted to the constitutional limit. On the other hand, it may be pointed out that Indiana municipalities during the last decade have not had an overall debt increase, while they have had increases in their overall resources as shown by increases in population, industrial expansion, etc. Debt limitations have a place in the argument as an evidence of what may be considered a safe amount of indebtedness, but none when the issue to be decided is the wisdom of constructing the kinds of improvements under consideration here, since they can generally be paid for through revenue financing or some other kinds which are not subject to constitutional limitations. The immediate task, however, is for each municipality to assess its needs; prepare its plans, including the making of specifications, the taking of options on or the purchase of land where that will be required.

[3] See Maurice Early—*Indianapolis Star,* January 14, 1944, Col. 1.

IV

FINANCING THE CONSTRUCTION OF WATER AND SEWERAGE WORKS

Separation of Preliminary and Final Construction Costs

If a municipality needs an extension or new construction of water and/or sewerage works, there would seem to be every good reason for it to be doing the preliminary work now when there is time to mature the plans without haste. Because of the present shortage of materials and the prevailing conditions of high private income and low municipal expense, it would seem that this is the most favorable time to complete skilled work such as designing and drawing specifications. When the materials become available, and in case there is need for employment, construction can be moved forward without delay or confusion. This would seem to be the surest way for a municipality to get a fair return on its investment.

If it is deemed desirable to do the preparatory work now, the first question is likely to be, "How is the money to be raised?" The answer to this question can best be made in light of what at first seems to be the peculiar legal situation in which Indiana municipalities find themselves.

The methods of financing water and sewerage projects were prescribed by the Act of 1905.[1] Some of the methods prescribed in that act for paying the costs of construction are obsolescent now, for example, the practice of assessing the cost of construction against benefiting property. Other methods have been developed, such as revenue bond financing. Also many municipalities have partly exhausted the powers granted by the Act of 1905, so that under it they could not completely finance extensions or new construction. As this situation has developed, the legislature has enacted specific enabling statutes.

If a city or town wishes to separate the preliminary costs from the final costs of construction, it has two sources of authority from which it may choose the methods to finance such work. It may choose the methods available under the Act of 1905, and, in a few cases, methods added by subsequent acts, or it may choose a method for meeting the preliminary cost from one of the specific enabling acts. However, if it chooses a method provided in one of the later specific acts, it must, as a rule, follow the requirements of that act in every respect, with regard to meeting the costs of final construction as

[1] Acts 1905, ch. 129, p. 219.

well as in other matters such as management. There may be circumstances under which municipalities may not be able to select far in advance the statute under which they will proceed in the future, but usually this can be done if they have determined definitely that they wish to undertake a given project.

It is as if a private person wanted to build a home at, as yet, some undetermined future time. He would like to plan some of the preliminaries now, including the acquisition of a lot and the employment of an architect to draw the plans. How will he pay for these preliminary costs? Will he want to arrange for them in the same way and as a part of the full program of paying for the entire construction, or will be want to defer making final financial arrangements until near the time when larger sums of money are needed?

It is as if a private person wanted to build a home at, as the money may be raised. The first part will be concerned with the means of paying for the preliminary expenses without reference to any plan for meeting the final construction costs. The second part of the chapter will be devoted to a digest of the statutes which the attorneys, engineers, and officials find used most often. Should a municipality feel that it is ready now to commit itself to a future construction program, then there is no reason why it should postpone choosing the specific act under which it may proceed and use the methods there specified with regard to raising all the money needed. But if it wishes to engage in exploratory activity or to determine later what means seem best at that time for financing the complete project, then it will likely want to use some of the means suggested in part 1, to pay for the preliminary work.

PART 1. FINANCING THE PRELIMINARY COSTS

Taxation

a. Boards of works and similar agencies

The authority for towns[2] and cities[3] to levy taxes "as may be deemed necessary . . . to supply the needs" of the corporation is clear cut and specific. It is simply a matter for the board of trustees of towns or the common councils of cities to make the levy, subject to the statutory restrictions on maximum tax rates,[4] and to appropriate the

[2] Acts 1905, ch. 129, sec. 31, cls. 3 and 18, p. 219; Burns 48-301; Acts 1905, ch. 129, sec. 37, p. 219; Burns 48-6801; also see Acts 1941, ch. 176, sec. 1, p. 532; Burns 1943 Supplement 48-6806.

[3] Acts 1905, ch. 129, sec. 200, p. 219; Burns 48-6708. For first class cities see Acts 1941, ch. 213, sec. 2, p. 645; Burns 1943 Supplement 48-6729.

[4] These restrictions are examined in Chapter VI.

funds to the proper agencies, for example the board of works in cities. This board or its equivalent is charged with the duty to "design . . . the improvements or repair of any property" belonging to the municipality, "lay out, design . . . the construction [and] alteration . . . of all public drains or sewers,"[5] and to "prepare all necessary profiles, drawings and specifications for such work,"[6] that is, to make the plans for sewer and drain construction before the contracts are let.[7]

b. Planning commission

Some of the preliminary work can be done by planning commissions. Cities[8] and towns[9] have been authorized to establish planning commissions which were to be supported by an appropriation from the general fund until a tax levy could be made. The levy is required to be "not less than three mills or more than five cents on each one hundred dollars of taxable property."[10]

In the original acts and as amended in 1935[11] considerable authority has been vested in the commission to employ "attorneys, engineers, architects, . . . consultants,"[12] "to make . . . surveys, studies, maps, plans," so that the commission could offer recommendations "respecting the location . . . [of] improvements, and the removal, relocation, widening or extension of such public works then existing . . . ."[12] Also a "public works program" was to be prepared which was to include "a comprehensive construction and financial program covering a ten-year period," to the end of assisting in "stabilizing industry and employment by promoting the planning and timing of public works in the city and its environs, and by the elimination of unplanned, untimely, unnecessary and extravagant projects."[13]

c. When bonds are to be issued

In case the municipality has been frugal and unappropriated moneys have been accumulated they may be used for defraying preliminary costs when a bond issue is planned. The relevant part of the statute which confers this authority on cities and towns is: ". . . in the event a

[5] Acts 1905, ch. 129, sec. 93, cls. 3, 7, p. 219; Burns 48-1902.

[6] Acts 1905, ch. 129, sec. 117, p. 219; Burns 48-3901; also see sec. 95; Burns 48-1904.

[7] For specific references to the planning duties of cities of the fifth class and towns see Acts 1905, ch. 129, sec. 265, p. 219; Burns 48-2745.

[8] Acts 1921, ch. 209, p. 561; Burns 48-2201 *et seq.*

[9] Acts 1927, ch. 3, p. 9; Burns 48-302.

[10] Acts 1921, ch. 209, sec. 10, p. 561; amended Acts 1923, ch. 92, sec. 1, p. 263; Burns 48-2210.

[11] Acts 1935, ch. 268, sec. 1, p. 1312; Burns 1943 Supplement 48-2212.

[12] Acts 1921, ch. 209, secs. 4,5, p. 561; Burns 48-2204, 48-2205.

[13] Acts 1935, ch. 268, sec. 5, p. 1312; Burns 1943 Supplement 48-2216.

city or town desires to make an addition to a utility which it owns or desires to acquire an existing utility by purchase or otherwise, the common council or the board of trustees, as the case may be, is hereby authorized and empowered to appropriate a sum of money from any fund not theretofore appropriated not exceeding 5% of the estimated cost of the addition to the existing utility or of the utility sought to be acquired, which said sum may be used by such city or town for the purpose of defraying such expenses incurred in making preliminary surveys, plans, specifications and appraisals, including engineering and legal expense as in the judgment of such common council or board of trustees, as the case may be, are necessary in order to make such addition or to acquire such utility, and the action of such common council or board of trustees, as the case may be, in making such oppropriation shall be final and not subject to review by the Indiana tax board."[14] It appears to have been the intention of the General Assembly to limit this authorization to spend from available funds to those cases in which a bond issue is anticipated, and further to limit authorization to cities and towns desiring to issue bonds in order to make an addition to utilities which they own or in order to acquire existing utilities. If the statute should be interpreted as authorizing cities and towns to make such an appropriation when bond issues are not anticipated, or for other purposes than adding to or acquiring existing utilities, there would be a question as to the constitutionality of this provision, stemming from a defective title of the act. Appropriation for preliminary expenditures other than in these two cases would have to be made under other statutes.

Borrowing

Cities[15] and towns[16] were given power to borrow money by the Act of 1905 to carry on municipal functions. Notwithstanding the fact that Indiana municipalities are generally considered to have practically exhausted their borrowing powers under this grant of authority, many of them still have sufficient leeway under the constitutional debt limit[17] to borrow the comparatively small amounts necessary to meet preliminary expenses.

Also the making of temporary loans may be used in connection with taxation. If a city includes in its budget a tax levy for the

[14] Acts 1943, ch. 178, sec. 4, p. 538; Burns 1943 Replacement 61-416.
[15] Acts 1905, ch. 129, sec. 55, p. 219; Burns 48-1410.
[16] Acts 1905, ch. 129, secs. 35, 36, p. 219; Burns 48-6804, 48-6805.
[17] For a discussion of this point see pp. 62-64.

purpose of paying preliminary costs of water or sewerage projects and wishes to start immediately on the work before the levy begins to yield an income, it may secure the money by a temporary loan. The Act of 1905 provides that temporary loans may be made with certain restrictions in anticipation of tax revenues if taxes are in the course of collection.[18]

Revenue from Municipal Plants

The revenue method of paying for water and sewerage works did not come into full use until long after 1905,[19] but there was a forerunner of it in the charter act. The provision in which this forerunner occurred is: "should there be any surplus money after paying the expenses of operating the water-works, the same may be applied to the repair, enlargement or extension of the works, or of the water supply . . . ."[20] While this applied only to those cities coming under the conditions set forth in that section, it does call attention to the fact that a great number of municipalities do own works of one kind or another from the operation of which they collect revenues. Frequently, these works have been built and are operated under a specific act which specifies how the income is to be handled. In many cases part of the income is to be put in a depreciation fund which may be used for extensions and new construction. Consequently, some municipalities will be able to raise money to meet preliminary expenses from the operation of their existing plants.

PART 2. SPECIFIC STATUTES TO FINANCE CONSTRUCTION

Water Works

Before taking up the specific statutes which are being used, two introductory observations will be made. First, there is one general power which is practically never employed so far as the authors are aware, namely, the use of taxing power to accumulate funds for future construction.[21] It is

Accumulating a surplus

[18] Acts 1905, ch. 129, sec. 55, p. 219; Burns 48-1410.

[19] The first use of income from a plant as the chief source of funds to pay for construction was in the Acts 1921, ch. 96, p. 265; Burns 48-5345 *et seq.*

[20] Acts 1905, ch. 129, sec. 139, p. 219; Burns 48-5401.

[21] This point is discussed in Ch. VI, pp. 65f. One case in which a city did set up such a fund is referred to in *Municipal Review,* May 1944, vol. ix, no. 2, published Fort Wayne Utilities; see questions nos. 14 and 26. The Fort Wayne Common Council voted in September 1898 to impose a tax levy to accumulate a fund for the construction of a light and power plant. This fund contained $320,000 derived from tax cources and $16,000 interest when it was used to construct the plant in 1907.

the opinion of the authors that municipalities have that power, subject to administrative restrictions.[22] The state, as is well known, has accumulated a cash surplus through the simple device of collecting revenues in excess of appropriations. However, municipalities are in different circumstances. The state has no direct debt while the municipalities have heavy direct debts. The creation of a surplus fund for future contingencies has not generally been looked on with favor especially for cities and towns partly because of their heavy debt burden and partly because of the temptation it places in the way of future administrations to tap the fund for current expenditures. Consequently, the State Board of Tax Commissioners has given expression to this attitude by trimming budgets and tax levies to a minimum. However, it may be suggested that if municipal policy forming bodies were to show a serious intention to provide a shelf of work by doing the preliminary work on post war projects, the state tax board would have more reason to approve items in budgets to pay for such expenditures. A way to show what the intentions are is to prepare complete designs, plans, and specifications.

The second introductory observation is concerned with the statutes selected for comment. It should be borne in mind that we have chosen only those statutes which attorneys, officials, and engineers have found to be actually used. The circumstances of a particular municipality or the exceptions made in any one of these acts may render it inapplicable to a given city or town. While the statutes referred to here are chosen because of their use, their presentation is for purposes of illustration. This is not an exhaustive treatment of enabling statutes. Each city and town has its own peculiar needs. These needs must be analysed and the statutes must be studied in order to find the one most applicable to the needs of each municipality. That is a job for the experts.[23]

New water works Formerly the construction of improvements such as water works was usually financed from the proceeds of the sale of general obligation bonds. A municipality sold its bonds and pledged its general credit to repay them. It then levied a tax on all property within its jurisdiction to service these obligations. However, in 1921 Indiana pioneered in the revenue bond field by providing that any city or town might finance the purchase of water works by the sale of bonds payable from the revenues of such works.[24] Since that time the revenue bond method of financing

[22] This point is discussed in Ch. VI, pp. 67f.

[23] See Chapter VII.

[24] Acts 1921, ch. 96, p. 205; Burns 48-5345 *et seq.*

has been extended to cover the construction of new systems and the extension and improvement of existing works. It has been used extensively, alone or in conjunction with general obligation bonds, for water financing.

The amendments to the Public Service Commission Act of 1913 enacted in 1933 are an example of this kind of revenue bond financing of new construction with the choice of using general obligation bonds also.[25] This act, besides providing authority to construct new water works, confers other powers on municipalities with regard to the ownership and operation of utilities[26] within the municipal corporation "or within six miles beyond the limits thereof, or at any place within the county in which such municipality is situated."[27]

Preliminary costs The importance of having preliminary work well done is underscored in the act by the provision that prior to making the final decision to proceed the municipal council (including the boards of trustees of towns) is authorized to appropriate out of its general fund, such amount, not exceeding five per cent of the total estimated cost of constructing the works "to pay the expenses of a preliminary investigation and a proper survey, including the making of engineering plans and an estimate of the cost of constructing . . . such utility." And the section continues "in the event it is finally determined to and said municipality does proceed under this act to construct . . . there shall be included in the total amount of money to be raised by the issuance of bonds . . . the amount of such expenditures, and said amount shall be repaid to the general fund . . . from the . . . sale of such bonds."[28] It may be suggested that the legislature did not set a ceiling on the amount which could be spent for engineering costs, at five per cent of the total cost of construction, but rather on how much could be appropriated in advance from the general fund for preliminary expenses. If the project is subsequently developed, additional funds from the sale of bonds can be used to pay additional engineering costs.[29]

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[25] Acts 1933, ch. 190, p. 928; This act is reproduced in Burns in various places beginning at 54-105 and ending at 54-719.

[26] Acts 1933, ch. 190, sec. 1, p. 928; Burns 54-105.

[27] Acts 1933, ch. 190 as amended Acts 1935, ch. 293, sec. 1, p. 1447; Burns 1943 Supplement 54-607.

[28] Acts 1933, ch. 190, sec. 13, p. 928; Burns 1943 Supplement 54-607.

[29] See Southern Indiana Gas and Electric Co. v. Boonville 213 Ind. 307 (1938) for a discussion of the power to appropriate money to pay attorneys' fees.

If the preliminary studies reveal the project to be one worthy of carrying to completion, there are two procedural matters to which attention should be called. First, when proceeding under this act it is not necessary that the municipality secure the approval or consent of the Public Service Commission.[30] Second, before proceeding further with the projects it will be necessary that the proposal be submitted to and be approved by the voters.[31] Should the vote be favorable, the project may be carried out; should a majority of the voters vote against the proposal, the project cannot be undertaken under this act for a period of two years since the statute provides that no further election on the question may be held within that period.[32]

Financing final construction There is a choice of means of financing the final construction under this act. Revenue bonds may be used alone[33] or they may be supplemented by the issue of general obligation bonds in an amount not to exceed one-third of the total cost of the utility.[34] If the general obligation bonds are to be issued, the fact must be determined before the election, because that fact and the amount is to be "clearly shown" on the ballot.

One note of caution may be sounded with regard to the time of maturity of the revenue bonds authorized by this act. It provides that they are payable over a period of forty years from the revenue derived through the operation of the utility.[35] However, the bond market is such that it usually is impossible to sell revenue bonds issued for the construction of a new water works system unless they are made payable over a period of not to exceed twenty-five years. The statute provides that the general obligation bonds may be for a longer term than twenty years. The revenue bonds are not subject to the constitutional debt limit,[36] since the statute provides that such bonds "and the interest thereon shall be a valid claim only against the . . . special fund, and . . . shall not constitute an indebtedness of such municipality within the meaning of the constitutional provisions and limitations."[37]

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[30] Acts 1933, ch. 190, sec. 16, p. 928; Burns 54-610.

[31] Acts 1933, ch. 190, secs. 10, 18, p. 928; Burns 54-602, 54-612.

[32] Acts 1933, ch. 190, sec. 18, p. 928; Burns 54-612.

[33] Acts 1933, ch. 190, sec. 17, p. 928; Burns 54-611.

[34] Acts 1933, ch. 190, sec. 16, par. c., p. 928; Burns 54-610.

[35] Acts 1933, ch. 190, sec. 17, p. 928; Burns 54-611.

[36] See Chapter VI for a discussion of this point.

[37] Acts 1933, ch. 190, sec. 17, p. 928; Burns 54-611. See Chapter VI for a further discussion of this point.

Management of the works The municipal council is to have jurisdiction over the project during the period when the preliminary work and the construction are being done; but the operation of the completed works may be placed under the control of the board of works, or a special utility service board. Provision is made that not more than a majority of the members may be of one party and the mayor is to appoint "the majority members" while the council is to appoint the minority members.[38]

The Improvement and Extension of Existing Systems

In general, extensions and improvements of existing water works systems can be financed under the provisions of the enabling act under which the works originally were acquired or constructed. For example if the system was acquired or constructed under the provisions of the act referred to above,[39] improvements and extensions should be carried out in the manner authorized in that statute, that is, to be paid for from the "special utility fund" into which certain revenues from the operation of the plant have been deposited.[40] If the system was paid for under the first revenue bond act of 1921,[41] as many were, then extensions may be built, either as provided by that statute or as provided for by one of its many amendatory acts. However, should building extensions envolve the issue of revenue bonds when former bonds are still outstanding, the procedure must be carefully executed to avoid pitfalls as will be indicated later.

When revenue bonds are issued under the provision of these acts, and so long as these bonds are outstanding, the provisions of the acts must be adhered to in carrying on improvements. Should there be no outstanding bonds payable from the revenue of the works, or if the outstanding bonds are refinanced, other means of paying for improvements may be followed although there are few statutes of general application which are available. There are several special acts such as an act of 1933 authorizing fifth class cities to issue revenue bonds[41a] whose provisions can be used only in special cases, which could be followed in constructing improvements of existing works, but they will not be here discussed since their applicability is so limited.

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[38] Acts 1933, ch. 190, sec. 19, p. 928; Burns 54-613.

[39] Acts 1933, ch. 190, p. 928.

[40] Acts 1933, ch. 190, sec. 16, par. d, p. 928; Burns 54-610.

[41] Acts 1921, ch. 96, p. 205; Burns 48-5345 *et seq.*

[41a] Acts 1933, ch. 259, p. 1147; Burns 48-5441 *et seq*

Department of Water Works Act of 1933 One act of somewhat general application, however, may be referred to. In cases where there are no outstanding bonds, or in case these bonds are to be refinanced through the issuance of new bonds, the Department of Water Works Act of 1933 is available for financing extensions and improvements to existing works.[42]

Management Before using the methods of financing provided in this act there must be established a department of water works through action of the governing body of the city or town owning or operating the water works system. The department is then to be under the exclusive management and control of a special board of trustees. The membership of this board is to be composed of resident freeholders and voters of the city or town and they are to be "divided equally or as nearly as possible in their political affiliations and beliefs."[43] This board is specifically authorized "to design, order, contract for and construct a water-works system, or any part thereof, now or hereafter necessary, and to make, construct, alter and build additions, extensions and betterments thereto. . . ."[44]

Preliminary financing Under this act the costs incident to planning and operation are to be paid from revenues of the plant, but provision is made so that expenses incurred "prior to the receipt of sufficient revenues derived from the operation of" the system may be drawn temporarily from the general fund to meet such costs. When the revenues of the plant become adequate this money is to be replaced. The employment of engineers and attorneys and the making of surveys is specifically mentioned.[45] It would seem however, that the temporary payment of preliminary expenses from the general fund is anticipated only at the time the department is created. After the plant is in operation under the management provided in the act, then if it is observed, money for preliminary expenses will be available in the "maintenance fund"[46] or the "depreciation account."[47]

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[42] Acts 1933, ch. 235, sec. 1, p. 1063; Burns 48-5301 *et seq.*

[43] Acts 1933, ch. 235, as amended Acts 1937, ch. 167, sec. 1, p. 871; Burns 1943 Supplement 48-5303.

[44] Acts 1933, ch. 235, sec. 5, p. 1063; Burns 48-5305.

[45] Acts 1933, ch. 235, secs. 7 and 8, p. 1063; Burns 48-5307, 48-5308.

[46] Acts 1933, ch. 235, sec. 9, p. 1063; Burns 48-5309.

[47] Acts 1933, ch. 235, secs. 13, 14, 15, 17, p. 1063; Burns 48-5313, 48-5314, 48-5315, 48-5317.

Under this act[48] revenue bonds may be issued for refunding outstanding bonds in order to defray the cost of improvements and extensions of the existing water works system. The statute specifically provides that these bonds are payable from revenue only, but that they do not constitute a municipal debt within the meaning of the constitutional provisions and limitations. While the statute provides for their amortization over a period of fifty years, it is only in the cases of utilities with most favorable records of past earnings that the bonds will sell if their maturities extend over twenty-five or thirty years.

It will be of interest to those having outstanding revenue bonds which they propose to refinance to know that such refinancing procedures usually are found to be complicated since revenue bonds seldom are callable. In fact in the usual case the municipal officials will not even know who the holders of the bonds are. In such cases it is doubly important that the advice of an expert bond counsel should be obtained before the passage of the ordinance creating the department of water works.

Administrative restrictions No election is required before a department of water works is established or before bonds may be issued, but this statute requires[49] that the approval of the Public Service Commission must be obtained before the bonds are issued.[50] However, should the Public Service Commission refuse to approve the issue, it is provided that the matter can be referred to the voters for a decision.

Other acts—An alternative method for financing extensions and betterments in case of unincumbered[51] water works systems is pro-

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[48] Acts 1933, ch. 235, sec. 19, p. 1063; Burns 48-5319.

[49] Acts 1933, ch. 235, sec. 24, p. 1063; Burns 48-5324.

[50] The approval of the Commission for the issue of revenue bonds as required in this act should not be confused with the question of whether the Commission has jurisdiction over the acquisition, construction or extension of utilities. The jurisdiction over the latter was abolished (Acts 1933, ch. 190, sec. 16, par. b., p. 928; Burns 54-610) in so far as any procedure under the Public Service Commission Act of 1933 was concerned. Some attorneys are of the opinion that the approval of the Commission is still necessary as provided for in other statutes, but the practice of the Commission has been on the assumption that its power over acquisition, construction, and extension was completely abolished.

[51] The restriction making this act applicable only to "unincumbered waterworks" is of little significance for those systems which have obligations outstanding that are payable solely from revenue derived from the operation of the plant. For a case in which the supreme court discussed this point, see Letz Mfg. Co. v. Public Service Commission 210 Ind. 467 (1936); also Underwood v. Fairbanks Morse Co. 205 Ind. 316 (1933).

vided for by an act of 1929[52] as amended in 1933.[53] This act as amended is applicable to all cities and towns. This, the Unincumbered Water Works Act, has been used in a number of cases, and in some respects it may be found to be more desirable than the Water Works Department Act of 1933 previously discussed. Under the latter act the control of the water works is taken away from the mayor and board of works, whereas the Unincumbered Act leaves the works under the control of the mayor. He may exert supervision through the board of works which he appoints or of which he is a member, or through a special board of trustees appointed by the mayor and of which he is ex officio the chairman.[54]

The Unincumbered Water Works Acts provides for the financing of extensions from the surplus which may accumulate in the depreciation fund,[55] or from the proceeds of the sale of revenue bonds.[56] The issue of bonds is subject to the approval of the Public Service Commission.[57] A decision of the Commission against the issuance of the bonds is subject to reversal by submitting the question to the voters.[58]

Act of 1905 and amendments Some cities have proceeded under the authority of the charter act and may desire not to use any of the special enabling acts of later date. They are, of course, free to follow such procedure if they have not exhausted their powers under that statute. However, there have been some amendments which have enlarged the powers of these municipalities so that they may still be able to use the charter powers as amended. For example, cities of the first, second, third, and fourth classes have been empowered to levy a tax of a sufficient amount "on all taxable property of the city" to pay the principle and interest on the "money borrowed" for the construction and completion of any water works, or for the purpose of "repairing or rebuilding the same."[59]

The tax levied for this purpose may not exceed fifty cents on each one hundred dollars of taxable property.

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[52] Acts 1929, ch. 155, p. 478; Burns 48-5328 *et seq.*

[53] Acts 1933, ch. 254, p. 1134; Burns 48-5328, 48-5337, 48-5338.

[54] Acts 1929, ch. 155, sec. 14, p. 478; Burns 48-5342.

[55] Acts 1929, ch. 155, sec. 6, p. 478; Burns 48-5333.

[56] Acts 1929, ch. 155, sec. 10, p. 478; Burns 48-5337.

[57] Acts 1929, ch. 155, sec. 11, p. 478; Burns 48-5339.

[58] Acts 1929, ch. 155, sec. 12, p. 478; Burns 48-5340.

[59] Acts 1905, ch. 129, sec. 139, p. 219 as amended Acts 1931, ch. 86, sec. 1, p. 248; Burns 48-5401.

This rapid survey may be closed by referring to The Revenue Bond Refinancing Act of 1937,[60] which, as its title indicates, provides authority for the refinancing of bonds. Although action under this statute has not been extensive, attention may be called to the fact that municipalities with large debts might well explore the possibility of refunding their debts to take advantage of current low interest rates. It may be suggested that such an undertaking is complicated and requires careful and expert preparation.

Sewerage Systems

General types of financing

Current financing of the construction, improvement, and extension of sewerage works includes three types of borrowing, (1) revenue bonds, (2) special taxing district bonds, and (3) general obligation bonds. No attempt will be made to discuss in detail the relative merits of these methods for raising money, because the legal status of each municipality as well as its financial and physical situation have to be taken into account before determining what would be advisable in any given case. It will be sufficient to caution each municipality to approach its problems of financing construction or extension in the light of as much information and specialized advice as it can secure.

Revenue bonds

The Revenue Bond Act of 1932

The statute of most general application for the building of sewerage systems is the so-called Revenue Bond Act of 1932[61] as amended in 1933[62] and 1935.[63] Under this act a complete method is set up for all cities and towns to finance a sewerage system or any section of it, which is being constructed as a part of a system or plan to collect and treat domestic and industrial wastes in the necessary sewage treatment plant or plants.

The necessity for sewage treatment

The necessity that adequate treatment of sewage be provided in any plan for construction before the provisions of the statute become available for raising money to construct sewers, should be underlined. It is the opinion of the authors that the legislative intent as exhibited in this statute permits the raising of money for the building of sewers of any type necesary for the collection of wastes, but only for the purpose of collecting and transporting them into a plant for treatment, and that a failure to provide complete treatment would result in an attempt to raise money illegally. It may be suggested

[60] Acts 1937, ch. 206, p. 1017; Burns 1943 Replacement 61-508 *et seq.*

[61] Acts 1932, ch. 61, p. 209; Burns 48-4301 *et seq.*

[62] Acts 1933, ch. 187, secs. 1, 2, p. 921; Burns 48-4305, 48-4309.

[63] Acts 1935, ch. 198, sec. 1, p. 967; Burns 1943 Supplement 48-4301.

that the connection of sewage treatment with the construction of sewers is in line with the observable tendency of the State Board of Health to approve sewer construction only in connection with adequate sewage treatment. Also it appears to be the policy of the Stream Pollution Control Board to move in the same direction in enforcing the statute against stream pollution. This general trend appears to be a part of the movement taking place on a nation-wide scale.

Preliminary expenses The method of providing for financing the preliminary costs can best be set forth by quoting the relevant part of the statute, with the explanation that references to city officials contained in the quotation are by specific statement made to apply to corresponding officials in towns. The section is as follows:[64]

> All necessary preliminary expenses actually incurred by the board of any city or town in the making of surveys, estimates of cost and revenues, employment of engineers or other employees, the giving of notices, taking of options and all other expenses of whatsoever nature, necessary to be paid prior to the issue and delivery of the revenue bonds pursuant to the provisions of this act, may be met and paid in the following manner. Said board may from time to time certify such items of expense to the controller of said city, directing him to pay the several amounts thereof, and thereupon said controller shall at once draw a warrant or warrants upon the city treasurer, which warrant or warrants shall be paid out of the general funds of said city or town not theretofore appropriated . . . or, in case there are no general funds of such city not otherwise appropriated, the city controller shall recommend to the common council the temporary transfer from other funds, of such city of a sufficient amount to meet such items of expense, or the making of a temporary loan for such purpose, and such common council shall thereupon at once make such transfer of funds, or authorize such temporary loan in the same manner that other temporary loans are made by such city; Provided, however, That the fund or funds of such city or town from which such payments are made shall be fully reimbursed and repaid by said board out of the first proceeds of the sale of revenue bonds hereinafter provided for, and before any other disbursements are made therefrom, and the amount so advanced to pay such preliminary expenses shall be a first charge against the proceeds resulting from the sale of such revenue bonds until the same has been repaid as herein provided . . . .

Financing the final construction The act as is indicated by the title is intended to provide a way to issue bonds "payable solely from the revenues" of the works as a means of raising money for the construction[65] or extension[66] of sewerage systems. The bonds are not "in any respect" to be a part of the corporate indebtedness

[64] Acts 1932, ch. 61, sec. 4, p. 209; Burns 48-4304.

[65] Acts 1932 as amended Acts 1933, ch. 187, sec. 2, p. 921; Burns 48-4309.

of the city or town[67] and are not therefore subject to the two per cent constitutional debt limit, though there is a restriction in the statute which requires that the question of the issuance of the bonds is to be submitted to the voters if the total amount of the bonds to be issued will exceed two per cent of the assessed valuation of the property in the municipality.[68] Failure to meet either interest or principal payments on bonds when due may result in the appointment of a receiver by any court having jurisdiction to operate the works in conformity with the act.[69]

Charges The method of collecting revenue from the operation of a complete sewerage system may be of interest. It is provided in the act that a service charge is to be made to the users of the system for amortizing the bonds and paying the cost of operating the works.[70] It is the practice to collect these charges (from those connected to the sewerage system) in a manner similar to the collection of water rates with which most municipal officials are familiar. Schedules of sewer service charge rates usually are based upon the amount of sewage discharged to the sewers as evidenced by the amount of water obtained from the water works system or other sources. This may be done even when the water is provided by a privately owned source, if arrangements can be made for the management of the water company to supply the necessary information regarding consumption for the city to base its charges. Adjustments are sometimes made in case any great amount of the metered water supply is utilized in such a manner as not to find its way into the sewerage system. Flat rates also are established occasionally as a basis for determining sewer service charges, although this method usually has been found to be less desirable than that in which the rates are charged in proportion to the water usage. In case of industrial wastes, charges are based upon the volume and "strength" of the wastes as compared with domestic sewage.

Service rates or charges not paid by sewerage users within thirty days after they become due may be collected by the board managing the works by means of a civil suit brought in the name of the municipality. Such charges do not become a lien upon the property unless judgment shall thus have been obtained.[71]

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[66] Acts 1932, ch. 61, sec. 10, p. 209; Burns 48-4310.
[67] Acts 1932, ch. 61, sec. 8, p. 209; Burns 48-4308.
[68] Acts 1932 as amended Acts 1933, ch. 187, sec. 1, p. 921; Burns 48-4305.
[69] Acts 1932, ch. 61, sec. 20, p. 209; Burns 48-4320.
[70] Acts 1932, ch. 61, sec. 14, p. 209; Burns 48-4314.
[71] Acts 1932, ch. 61, sec. 14, p. 209; Burns 48-4314.

Management of works The construction of a sewerage works under this act is to be done under the supervision of the Board of Works or the board or committee empowered by law to carry on the functions of the Board of Works.[72] The operation and maintenance of the works when completed may either be handled by this board or by a special board as provided for in the act if established by ordinance.[73]

In cases where funds are needed for the improvement or extension of existing sewerage works, the act of 1932 provides two sources: (a) payment directly from the revenues of the plant,[74] (b) the issuance of additional bonds.[75] Unless the original sewerage system was built under the Revenue Bond Act of 1932, it is probably impracticable to attempt to finance additional lateral sewers through the sale of revenue bonds. In case it seems unwieldly to issue additional bonds, attention may again be directed to the possible availability of the Revenue Bond Refinancing Act of 1937 as a way out.[76]

When additional bonds are to be issued, or outstanding bonds are to be refunded in connection with a new issue, a municipality should proceed with due diligence and in the light of the best advice obtainable. The issuance of the additional bonds might in some way result in the violation of the obligation of the contract made in the original issue which is prohibited in the United States Constitution.[77]

Special taxing district bonds The creation of special taxing districts is a device to use the machinery of taxation to collect fees from property holders for services or benefits rendered to them, for example in collecting and treating sewage. When a sanitary district is created then bonds issued to build sewage treatment plants are serviced by fees (taxes) levied on the property within the district.

The 1917 Sanitary District Law In 1917 an act applying only to first class cities (Indianapolis) authorized the issuance of special sanitary district bonds for meeting the cost of sewage treatment construction projects.[78] This act was amended in 1921

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[72] Acts 1932, ch. 61, sec. 2, p. 209; Burns 48-4302.

[73] Acts 1932, ch. 61, sec. 16, p. 209; Burns 48-4316.

[74] Acts 1932, ch. 61, sec. 11, p. 209; Burns 48-4311; also see sec. 13; Burns 48-4313.

[75] Acts 1932, ch. 61, secs. 10, 19, p. 209; Burns 48-4310; 48-4319.

[76] See above p. 42.

[77] Art. 1, sec. 10. However, see (Acts 1932, ch. 61, sec. 10, p. 209; Burns 48-4310) a clause which strives to provide a way to avoid such a conflict by permitting the holders of the original bonds to consent to the subsequent issue.

[78] Acts 1917, ch. 157, p. 573; Burns 48-4201 *et seq.*

to apply to second class cities,[79] and in 1941 it was made applicable to fourth class cities having an assessed valuation of not less than twenty million dollars.[80]

Preliminary expenses All preliminary expenses incurred prior to the issuance of bonds or the collection of taxes levied on the property in the district are to be paid from the general fund of the city, or by a temporary transfer from such other municipal funds in which the money is available, or by temporary loans.[81] The usual rule with regard to replacing moneys obtained from city sources is generally applicable in this case.

"For the purpose of raising money to pay . . . [for] construction, and in anticipation of [the collection of a] . . . special tax to be levied," bonds may be issued "not to exceed in amount the total cost of all lands, rights of way and other property so to be acquired and the contract price of all work of construction."[82] The section quoted then proceeds to set forth in detail the costs which are to be included to determine what the total amount of the bond issue is to be. Also the top limit is set in this language: "It shall be unlawful . . . [to issue] any bonds of said sanitary district payable by special taxation when the total issue for that purpose, including the bonds already issued and to be issued, is in excess of two per cent of the total assessed valuation [after deducting all mortgage exemptions] of the property within said sanitary district . . . ." Furthermore, these bonds are "not in any respect . . . a corporate obligation or indebtedness" of the city[83] and are consequently not subject to the debt limitation of the constitution. Authority is then given to levy a tax to pay costs of acquiring property, etc., and operating expenses[84] and to raise money to service the bonds.[85]

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[79] Acts 1921, ch. 258, p. 768; Burns 48-4227.

[80] Acts 1941, ch. 163, sec. 1, p. 496; Burns 1943 Supplement 48-4249. There was also an act in 1913 (ch. 307, Burns 48-4101 *et seq.*) providing for the establishment of sanitary districts to include territory containing two or more incorporated municipalities. This act is not discussed because of the lack of use of it.

[81] Acts 1917, ch. 157, sec. 6, p. 573; Burns 48-4206.

[82] Acts 1917 as amended 1943, ch. 107, sec. 3, p. 332; Burns 1943 Supplement 48-4217.

[83] Acts 1917 as amended 1943, ch. 107, sec. 3, p. 332; Burns 1943 Supplement 48-4217.

[84] Acts 1917, ch. 157, sec. 9, p. 573; Burns 48-4209.

[85] Acts 1917, ch. 157, sec. 19, p. 573; Burns 48-4219. Also see Acts 1943, ch. 107, sec. 4, p. 332; Burns 1943 Supplement 48-4221.

Management and extent of the sanitary district This statute and its amendments provide for the establishment by municipal ordinance, of a Department of Public Sanitation,[86] which except in the case of first class cities,[87] is administered by a special "Board of Sanitary Commissioners." These commissioners, variously appointed, serve for a definite term of four years.[88] They are removable by the mayor for neglect of duty or incompetency, but only after a hearing upon written charges. The finding of the mayor may be appealed to the circuit or superior court.

The area of the district includes all the territory within the corporate limits including incorporated towns within those limits, and the district may be extended beyond the limits of the parent municipality to include all cities or towns, or even unincorporated areas within the county.[89]

General obligation bonds The borrowing of money on the credit of the municipality has been discussed in the first section of this chapter as a source of funds for preliminary expenses. The raising of additional funds for financing the costs of final construction is done similarly. It may be said that in addition to the power given in the charter act,[90] there have been additional authorizations for specific purposes, for example an act of 1927.[91] Also in addition to discussion of this method of raising money elsewhere, it is now of relatively small importance because many municipalities do not have sufficient borrowing power left to provide for complete financing by the use of general obligation bonds.

The foregoing brief survey of representative statutes is not exhaustive, merely illustrative of the methods most frequently used. Consequently, where a municipality begins to finance works, it may find that its unique situation makes imperative the selection of a statute not mentioned here. It may also appear singular to those acquainted with common practice a decade or two ago that no

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[86] Acts 1917, ch. 157, sec. 1, p. 573; Burns 48-4201.

[87] Acts 1935, ch. 159, sec. 1, p. 580; Burns 1943 Supplement 48-4239. This act transferred the administration of the affairs of the sanitary district to the board of public works and sanitation.

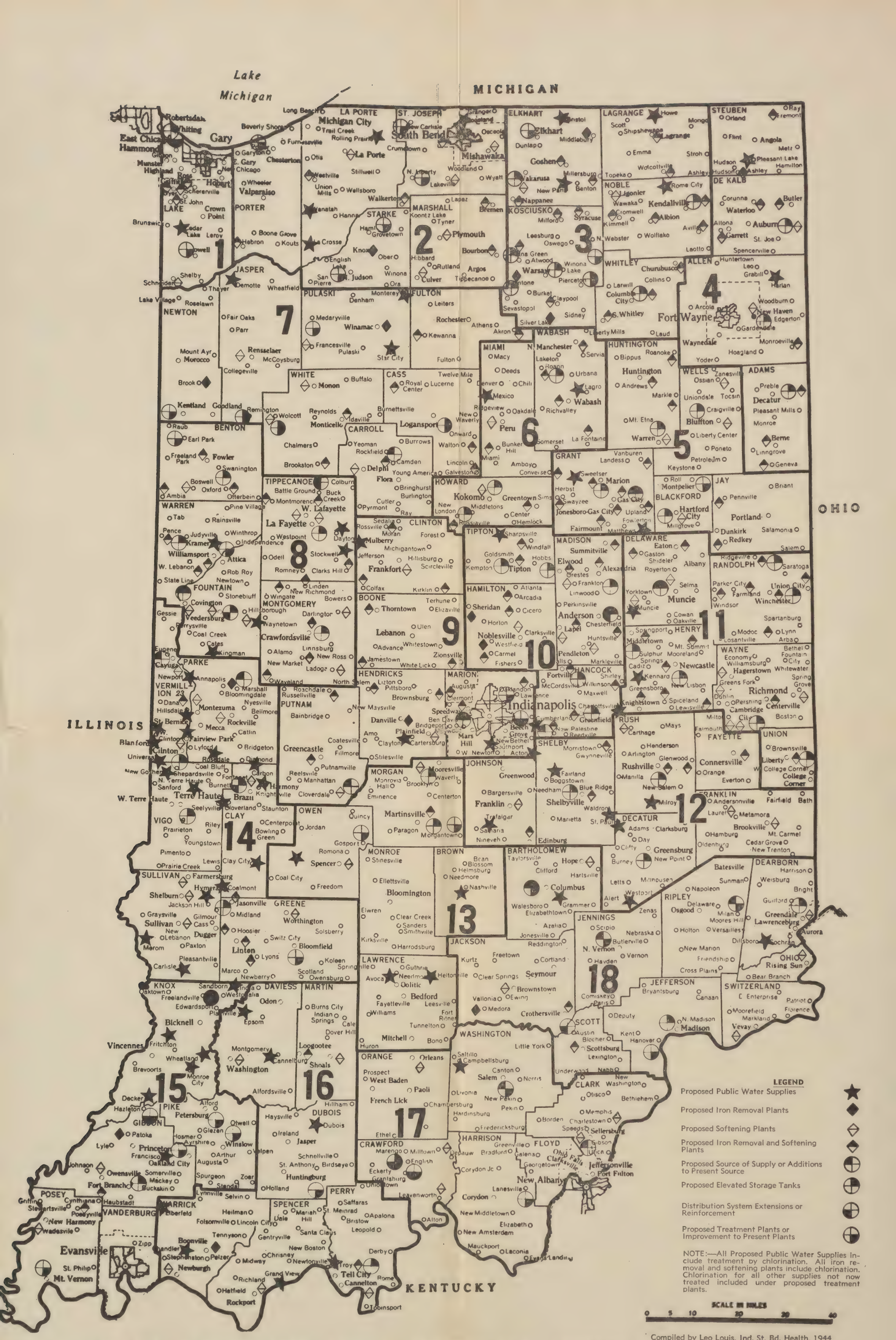
[88] The board is composed of three members. The city civil engineer is ex officio a member. The mayor appoints the other two, one on his own nomination and the other on nomination by the State Board of Health. The Board of Health has always nominated some local engineer having the qualification required in the statute (Acts 1917, ch. 157, sec. 1, p. 573; Burns 48-4201).

[89] Acts 1917 as amended Acts 1943, ch. 107, sec. 2, p. 332; Burns 1943 Supplement 48-4205.

[90] Acts 1905, ch. 129, p. 219.

[91] Acts 1927, ch. 233, p. 675; Burns 48-3905 *et seq.*

detailed discussion of the special benefit assessment method of financing (Barrett law) is included at this point. This method is in general disfavor because so many holders of Barrett law bonds or certificates unfortunately have been forced to take over the benefitted property or accept principal and interest discounts because of defaults by the owners in meeting deferred payments. Therefore this type of financing is omitted here because of its present obsolescent character.



LEGEND

- Proposed Public Water Supplies
- Proposed Iron Removal Plants
- Proposed Softening Plants
- Proposed Iron Removal and Softening Plants
- Proposed Source of Supply or Additions to Present Source
- Proposed Elevated Storage Tanks
- Distribution System Extensions or Reinforcement
- Proposed Treatment Plants or Improvement to Present Plants

NOTE:—All Proposed Public Water Supplies include treatment by chlorination. All iron removal and softening plants include chlorination. Chlorination for all other supplies not now treated included under proposed treatment plants.

SCALE IN MILES

0 5 10 20 30 40

Compiled by Leo Louis, Ind. St. Bd. Health, 1944

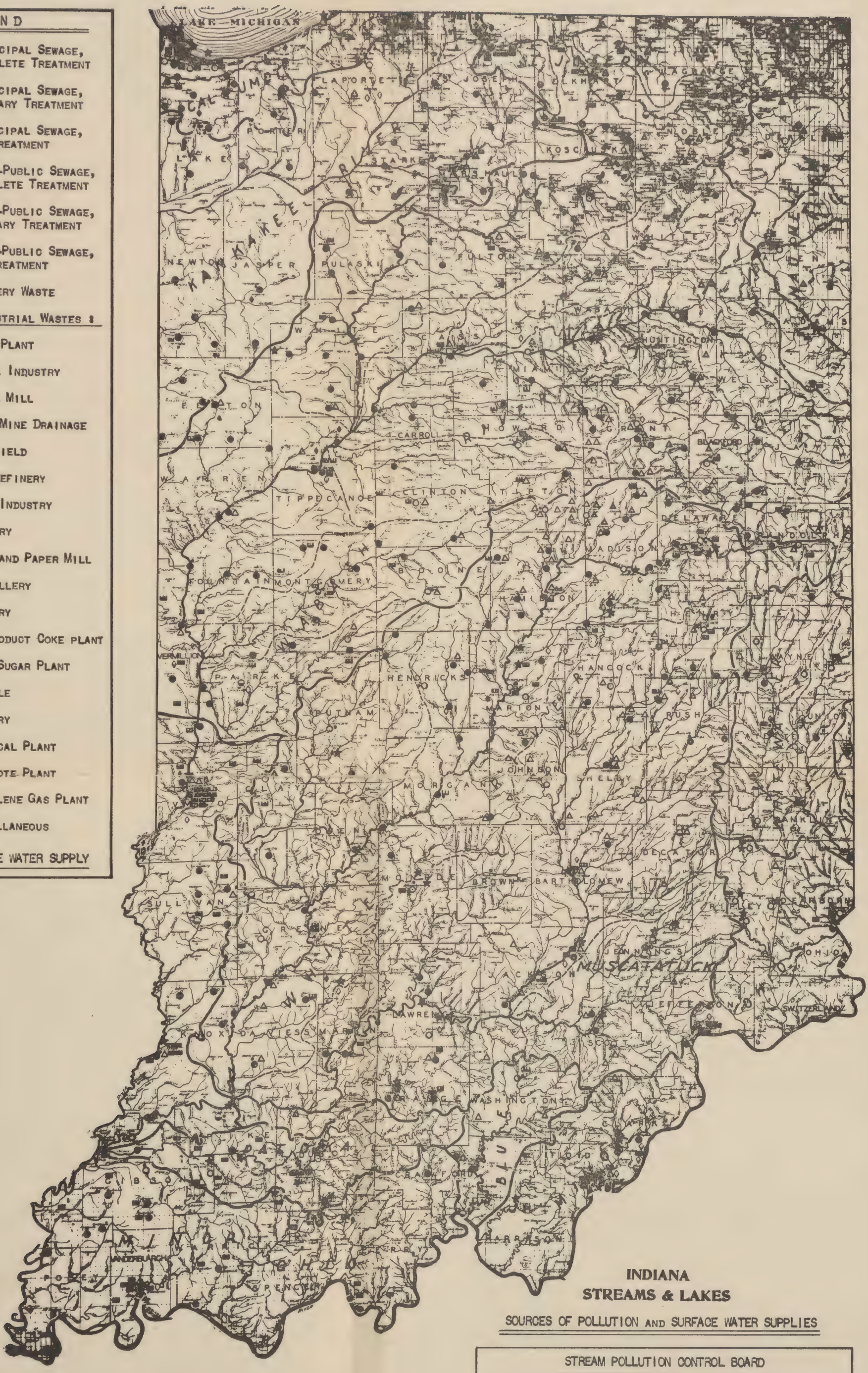
INDIANA PUBLIC WATER SUPPLY DEVELOPMENT PROGRAM

LEGEND

- Municipal Sewage, Complete Treatment
- Municipal Sewage, Primary Treatment
- Municipal Sewage, No Treatment
- Semi-Public Sewage, Complete Treatment
- Semi-Public Sewage, Primary Treatment
- Semi-Public Sewage, No Treatment
- Cannery Waste

Other Industrial Wastes :

- [1] Milk Plant
- [2] Metal Industry
- [3] Steel Mill
- [4] Coal Mine Drainage
- [5] Oil Field
- [6] Oil Refinery
- [7] Meat Industry
- [8] Tannery
- [9] Pulp and Paper Mill
- [10] Distillery
- [11] Brewery
- [12] By-Product Coke plant
- [13] Beet Sugar Plant
- [14] Textile
- [15] Laundry
- [16] Chemical Plant
- [17] Creosote Plant
- [18] Acetylene Gas Plant
- [M] Miscellaneous
- ★ SURFACE WATER SUPPLY



INDIANA
STREAMS & LAKES

SOURCES OF POLLUTION AND SURFACE WATER SUPPLIES

STREAM POLLUTION CONTROL BOARD

Thurman B. Rice, M.D. chairman – State Board of Health
Hon. Charles M. Dawson – Lieutenant Governor
Hugh A. Barnhart – Dir. State Dept. of Conservation
Leo Besozzi – Hammond
C. K. Calvert – Indianapolis
H. Scott Pickens – New Albany
Jos. L. Quinn Jr., Tech. Secretary – Indianapolis

POLLUTION MAP PREPARED BY R.W.HEIDER, STATE BOARD OF HEALTH, 1944.

V

LEGAL AUTHORITY OF CITIES TO CONSTRUCT WATER, SEWER AND SEWAGE TREATMENT FACILITIES

The Legal Relation of Municipalities to the State

Municipalities created by the state

The general legal power of cities and towns to construct the kind of utilities under consideration here may be referred to in an abridged statement. Municipal corporations are creations of the state. According to current theory they may have their status established by the state constitution, or if the constitution is silent with regard to them, their existence is dependent upon the will of the legislature. "Therefore," McQuillin observes, "independent of legislative action the inhabitants of a given territory or place possess no inherent power to incorporate themselves, or to create a local corporation, investing it with powers of internal government."[1] He continues: "Unless restricted by the constitution, therefore, the power of the legislature either by general or special law, to create or provide for the creation of . . . municipal corporations . . . is absolute and unlimited. The creation and organization of these bodies, the determination of the form, the powers of government and the method of exercise thereof, and indeed, of everything appertaining to the fundamentals of municipal charters are, in the absence of limitation in the organic law, essentially legislative functions."

Construing municipal powers

The best known rule for the construction of the powers which are granted to municipalities is that enunciated by Judge Dillon as follows:[2]

> It is a general and undisputed proposition of law that *a municipal corporation possesses and can exercise the following powers, and no others:* First, those granted in *express words;* second, those *necessarily or fairly* implied in or *incident* to the powers expressly granted; third, those *essential* to the accomplishment of the declared objects and purposes of the corporation,—not simply convenient, but indispensable. Any fair, reasonable, substantial doubt concerning the existence of power is resolved by the courts against the corporation, and the power is denied.

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[1] McQuillin, *Municipal Corporations* (2nd ed.) Vol. I, sec. 145, p. 416; hereafter cited as McQuillin.

[2] Dillon, *Commentaries on the Law of Municipal Corporations,* (5th ed.) Vol. I, sec. 237, p. 448; also see McQuillin, *op. cit.,* sec. 368, p. 918ff; italics in the original.

Application of general rules to Indiana municipalities

When these two rules with regard to the status of municipal corporations and the construction of powers granted to them are applied directly to Indiana, two observations may be made. The first is that Indiana municipal corporations have no status established by the Constitution. It is true that there are references to cities and towns and municipal corporations in the Constitution, but none of these references can be said to give municipalities any

a. Status

status as against the will of the legislature. For example, in a section relating to the power of the General Assembly to regulate elections, the first reference to cities and towns in the Constitution is found in the following clause:[3] "In providing for the registration of persons entitled to vote, the General Assembly shall have power to classify the several counties, townships, cities, and towns . . . and to enact laws prescribing a uniform method of registration. . . ." It may be concluded then that McQuillin's general statement is applicable specifically to Indiana, namely, that municipal corporations in their existence, structure, form, and powers are subject to the legislative will.[4]

The second observation, relative to the construction of powers granted by statute to the cities, must include a reference to two lines

b. Construction of powers granted

of decisions, an early one which seemed to permit interpretation of powers more liberal than permitted under Dillon's rule,[5] and another line of decisions which is a clear application of that rule. However, it must be said that the courts have recently, and predominately

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[3] Art. 2, sec. 14. Other references to cities, towns, and municipal corporations are Art. 6, secs. 6, 8, 9, and Art. 13.

[4] Persons who recall the case Keane v. Remy, 201 Ind. 286 (1929), may feel that the conclusion offered is too sweeping. However, choice of the kind of government as provided by statute was not at issue in that case. That point had been determined by the Supreme Court in line with the conclusion as here stated in Sarlls, City Clerk, v. State, *ex rel* Trimble *et al* 201 Ind. 88 (1929). In Keane v. Remy the issue was the reasonableness of procedures prescribed by the legislature; and since the court found that the procedures prescribed by the statute were unreasonable, the statute being dependent upon the procedures was thereby rendered inoperative.

[5] Two such decisions are: The City of Evansville, *et al* v. The State *ex rel* Blend, *et al*, 118 Ind. 449 (1888); The State *ex rel* Holt *et al* v. Denny, Mayor, *et al* 118 Ind. 449 (1888). In the Evansville case, this language was used: "It, therefore, becomes a question whether or not the legislature may take from the people of these two cities [Evansville and Indianapolis] the right of local self-government, the right to manage and control their own purely local affairs in their own way, and place the management of all such local affairs under State control. We do not believe that the Legislature has any such power. Before written Constitutions, the people possessed the power of local self-government."

followed the second line and that Dillon's rule provides the only safe criterion to judge an Indiana municipality's power at this time.[6]

It is true that in at least two relatively recent cases, the Supreme Court has used language which may appear on casual reading to be a repudiation of Dillon's rule.[7] Such language includes the following ". . . this court consistently held that municipalities had inherent authority to make such improvements as those contemplated. . . ." It may be suggested, however, in both cases, the court was referring to powers granted by implication or powers which were essential to the accomplishment of the legislative objects and purposes in creating the municipal corporations. The powers referred to by the Court inhered in general powers granted; the court was not saying that these powers of the municipalities were such as to be beyond the legislative control of the General Assembly.

Powers granted to Indiana municipalities Coming now to the powers which have been granted to Indiana municipalities, it may be pointed out that the basic act is the so-called Cities and Towns Act of 1905.[8] In it the statutes relating to municipalities prior to that year were in a manner codified, thus for most practical purposes automatically superseding and displacing the earlier statutes. As a general matter all previous statutes were then repealed by the last section. It provided:[9]

> All former laws within the purview of this act except laws not inconsistent herewith and enacted at the present session of the general assembly, are hereby repealed. . . .

a. The basic law, the act of 1905 It was held, however, that early statutes continued to be of significance in some cases, as for example, when a type of organization provided for in an earlier statute was also provided for in the Act of 1905.[10]

It may be said that the present powers of cities and towns stem from the act of 1905, subsequent statutes may limit powers granted by it, set up specified procedures to be used in exercising powers granted by it, or in some cases add to the powers conferred on

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[6] Representative cases selected during the period 1884 to 1937 are: Anderson v. O'Connor 98 Ind. 168 (1884); Scott v. City of Laporte *et al* 162 Ind. 34 (1904); City of Indianapolis v. College Park Land Co. 187 Ind. 541 (1918); Denny v. City of Muncie 197 Ind. 28 (1925); City of Huntington *et al* v. Northern Ind. Power Co. 211 Ind. 502 (1937).

[7] Underwood v. Fairbanks Morse & Co. 205 Ind. 316, pp. 324, 325 (1933); Letz Mfg. Co. v. Pub. Service Com. 210 Ind. 467, p. 477 (1936).

[8] Acts 1905, ch. 129, p. 219.

[9] Acts 1905, ch. 129, p. 219, sec. 272 at p. 410.

[10] See Arnett v. State, 163 Ind. 180 (1907).

municipalities in that act. For example, the general power is given in the act of 1905 to provide a city water supply. A city may, if it so decides, proceed under this general authority in the manner prescribed in the act for the exercise of other powers involving the formulation of policy, the expenditure of money, and the management of economic affairs. A subsequent act, however, may provide for a specific means of constructing or financing a waterworks. If the municipality wishes to use this newer method of procedure, then it must follow in detail all of the provisions of the subsequent act which may be a limitation of a procedural nature in powers previously granted. It will be the purpose in the paragraphs immediately following, first, to refer to representative powers given to the municipalities by the Act of 1905 relating to the improvements under discussion here; and second, to illustrate the effect of subsequent statutes on the basic act as they change, limit, or extend power with regard to water and sewerage facilities.

Powers Granted in the Act of 1905

The purpose of this section is to deal with the fact of the delegation of powers to municipalities to provide water and sewerage. While the Act of 1905 does contain provisions relating to finance, this and other authority to finance will not be discussed here.

Water supply

Ample general powers were granted to the municipalities by the Act of 1905 to supply water. However, in most of the references to water supply, it appears that the legislature was primarily concerned with such matters as the methods of supplying water, financing procedures, municipal regulation of privately owned water works or the management of municipally owned systems and was only secondarily concerned with the delegation of power as such to municipalities. Consequently, the authority for supplying water appears, in many instances, to be incidental to some of these other purposes. In one instance authority was given to towns to provide for water as subordinate to the power to provide protection against fire. The relevant language of the section is: "The board of town trustees shall have the following powers . . . to construct, purchase and preserve engine-houses, fire stations, fire apparatus, reservoirs, wells, pumps, and other water-works for supplying such town with water for fire protection and other purposes and to regulate the use thereof. . . ."[11] Elsewhere in that act, the powers delegated to certain classes of cities with regard to the supply of water are conferred also on towns. The general power to

a. Towns

[11] Acts 1905, ch. 129, sec. 31, p. 219, cl. 3; Burns 48-301, cl. 3.

supply water, along with the provision for other services is conferred on the board of works of cities of certain classes,[12] then subsequently in the act this power is extended to towns.[13]

The power of cities to provide water is found in several places in the Act of 1905. Perhaps one of the clearest delegations is: "The board of public works shall have power: . . . To purchase within or without the limits of such city and to construct, by contract or otherwise, and to operate, water works . . . for the purpose of supplying such city and the inhabitants thereof with the use and convenience of such works. . . ."[14] Other references to powers, for the most part, are concerned more with the manner of the exercise of the power than with the fact of its delegation to the cities.[15] The Act of 1905 provided that any city or town, before "entering upon the policy of erecting and constructing any . . . new [water] works . . . or the purchase of the same" was required to hold an election on the matter.[15a] In a comparatively recent case, the supreme court considered this provision and held that once a municipality had entered the business, it was not required to hold an election for the purpose of deciding engineering choices as to the installation of equipment or for replacements necessary because of inefficiency or obsoleteness.[15b]

b. Methods of supply Under this act, cities and towns have a pleasing array a la carte as to the methods by which water can be made available for the use of the municipal governments themselves or for the private use of their citizens. They may construct the water system,[16] purchase one already in existence,[17] extend this system which they construct or buy,[18] purchase stock in a system

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[12] Acts 1905, ch. 129, sec. 93, p. 219; Burns 48-1902.

[13] Acts 1905, ch. 129, sec. 249, p. 219; also see secs. 253, 254; Burns 48-7201; also see 48-7301, 48-7302.

[14] Acts 1905, ch. 129, sec. 93, cl. 8, p. 219; Burns 48-1902. The power conferred on cities of the 1st, 2nd, 3rd, and 4th class by this section was extended to cities of the 5th class by sec. 249; Acts 1905; Burns 48-7201.

[15] Among such references in the act, the following may be cited: Acts 1905, ch. 129, p. 219; (the sections of the act and corresponding references in Burns will be given) sec. 53, cl. 36, Burns 48-1407; sec. 85, Burns 48-1507; sec. 93, cls. 9, 11, Burns 48-1902; sec. 139, Burns 48-5401; sec. 249, Burns 48-7201; sec. 253, Burns 48-7301.

[15a] Acts 1905, ch. 129, sec. 249, p. 219; Burns 48-7201. This section was subsequently amended, but without changing the substance of this provision of the section.

[15b] Indiana Service Corporation v. Town of Warren 206 Ind. 384 (1934).

[16] Acts 1905, ch. 129, sec. 93, cl. 8, p. 219 Burns 48-1902.

[17] Acts 1905, ch. 129, sec. 249, p. 219; Burns 48-7201.

[18] Acts 1905, ch. 129, sec. 249; Burns 48-7201.

and exert control by reason of part ownership,[19] or permit a private corporation to supply water[20] or lease its plant to the municipality.[21]

Thus on the single issue of the legal authority of cities and towns to provide themselves with public water supplies, the Act of 1905 is sufficient in itself.

Sewers Towns are authorized by the Act of 1905 "To lay out, open, change . . . and otherwise improve . . . sewers . . . and keep them in repair. . . ."[22] All cities and towns are empowered to control sewers and drains, and to "provide for the construction of all sewers and drains."[23]

Sewage treatment plants Cities which were permitted under the Act of 1905 to have boards of works were specifically authorized by the following clause to provide sewage treatment plants in addition to sewers: "The board of public works shall have power. . . . To prepare a general uniform plan for the drainage and sewerage of such city, and extend the same from time to time, and to provide for the disposal of sewage."[24] The Act created boards of works in cities of the first, second, third, and fourth classes,[25] however, this power was apparently given to fifth class cities and towns by a subsequent section which provided that the provisions of the act relating to ". . . sewer and other public improvements" should "apply to cities of the fifth class and to incorporated towns, and the duties of the board of public works in relation to such matters . . . [were to] be performed in cities of the fifth class, by the common council, and in towns, by the board of town trustees. . . ."[26]

Elsewhere in the act there are numerous references which confer authority either directly or by implication on cities and towns to provide for sewerage.[27]

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[19] Acts 1905, ch. 129, sec. 93, cl. 8, p. 219; Burns 48-1902; Acts 1905, ch. 129, sec. 254, p. 219; Burns 48-7302.

[20] Acts 1905, ch. 129, p. 219, sec. 53, cl. 36; Burns 48-1407; Acts 1905, ch. 129, p. 219, sec. 93, cls. 9, 11; Burns 48-1902; Acts 1905, ch. 129, p. 219, sec. 253; Burns 48-7301.

[21] Acts 1905, ch. 129, sec. 249, p. 219; Burns 48-7201.

[22] Acts 1905, ch. 129, sec. 31, cl. 9, p. 219; Burns 48-301.

[23] Acts 1905, ch. 129, sec. 267, p. 219; Burns 48-503.

[24] Acts 1905, ch. 129, sec. 93, cls. 1, 17, p. 219; Burns 48-1902.

[25] Acts 1905, ch. 129, sec. 91, p. 219; Burns 48-1901.

[26] Acts 1905, ch. 129, sec. 265, p. 219; Burns 48-2745.

[27] In addition to those cited above, some of them are: Acts 1905, ch. 129, p. 219; (the sections of the act and corresponding references in Burns will be given) sec. 53, cls. 9, 27, 31, Burns 48-1407; sec. 93, cls. 3, 17, 18, Burns 48-1902; secs. 117-120, Burns 48-3901 to 48-3904; sec. 253, Burns 48-7301; sec. 257, Burns 48-7209; sec. 254, Burns 48-7302; sec. 256, Burns 48-7309.

Effect of Later Legislation

Effect on Act of 1905

It will be seen from the above discussion that Indiana cities and towns were given authority to deal with water supply and sewerage by the Cities and Towns Act of 1905. Statutes of the General Assembly enacted at later dates are to be regarded as amendatory or supplemental to the basic act, or as providing alternative methods for providing the facilities being considered here. For example, the first revenue statute, the water works act of 1921 set up a procedure for a municipality to purchase a water works.[28] If a municipality chooses to proceed under this act, it is required to provide by ordinance that the "principal and interest of bonds issued for the payment of the purchase-price" will be "paid solely and exclusively from the income . . . of such plant."[29] Explicit directions are contained in the statute for the handling of the revenues to insure that the works will be operated, maintained, and the debt retired from them.[30] The supreme court has referred to this act as providing an alternative method for the public supply of water.[31]

This act as amended also provides as an alternate to management by the board of works, the creation of a special board for that purpose.[32] Many other statutes relating to water, sewers, and sewage treatment plants are concerned with matters of management, special districts for water or drainage, and particularly with methods of financing construction and improvement of these facilities. This was dealt with in the section in which the legal authority for financing was discussed.

State agencies with power over municipalities

It may be seen from the above discussion that municipalities have the power to provide for the facilities here under consideration. It may be stated as a legal proposition that the choice of providing public water and sanitary facilities rests entirely with them. However, if a municipality, in the exercise of its discretion, decides to provide for a public water supply or sewer system, it must then act in conformity with the permanent supervisory authority of the State Board of Health and the Stream Pollution Control Board.

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[28] Acts 1921, ch. 96, sec. 1, p. 205; Burns 48-345 *et seq.*

[29] Acts 1921, ch. 96, sec. 3, p. 205; Burns 48-5347.

[30] Acts 1921, ch. 96, sec. 4, p. 205; Burns 48-5348.

[31] Hamilton v. Public Service Commission 215 Ind. 138 (1939).

[32] Acts 1927, ch. 190, sec. 3, p. 557; Burns 48-5365.

State Board of Health The power of the State Board of Health is set forth in several statutes; representative ones with respect to water are: the "state board of health shall . . . have power . . . to regulate and prescribe the character and location of . . . water supply. . . .";[33] and on complaint of the proper officers or of a number of citizens that the water supply of a city or town is dangerous to health, it is made the duty of the state board to investigate, and if the water is found to be impure and dangerous to health, then after complying with the prescribed procedure, the board is to recommend changes necessary to remedy the impurity, "which changes shall be made within a reasonable time. . . ."[34] A rule of the state board provides that whenever its investigation shows that a public water supply of a municipality is insanitary or in a condition to be causative of disease it may order constructed "a public water supply system, including a source of supply, distribution lines and other necessary appurtenances, sufficient to abate insanitary conditions causative of disease and to protect the public health."[35]

The power of the State Board of Health to compel the installation of sewers and sewage treatment plants is extensive. For example, if after a hearing on the charges that a city is discharging sewage into any water-course and is thereby injuring it for domestic use, the board finds such to be true, it is to suggest changes in plant or property "as will render the noxious matter so being passed into the water innocuous and harmless, and shall require, by its order, the offender to adopt and apply the board's recommendation . . . before the offender shall again resume such use of the water";[36] however, a reasonable time is to be permitted for compliance. Rules which the board has issued pursuant to this statute require, upon proper findings and specific orders, the construction of "sewers, interceptors, sewage treatment works, and such other parts and appurtenances of a sewerage system, as may be necessary to abate the insanitary conditions causative of disease and to protect the public health."[37] The rules with regard to State Board of Health approval of the design of sewer systems and treatment are specific and far reaching. "No city or town . . . shall install . . . any sewers, sewage treatment works . . . until plans and specifications, together with an engineer-

[33] Acts 1891, ch. 15, sec. 6, p. 15, as amended acts 1909, ch. 144, sec. 3, p. 342; Burns 35-106.

[34] Acts 1913, ch. 35, sec. 1, p. 63; Burns 35-211.

[35] Frank E. Horack, Indiana Administrative Code, Vol. 1, rule 35-111-1, hereafter cited as Horack.

[36] Acts 1909, ch. 24, sec. 1, p. 60; Burns, 35-201.

[37] Horack, 35-201-1.

ing report supporting in detail the design set forth in such plans, shall have been submitted to and have been approved by the state board of health. . . ."[38]

Stream Pollution Board The recently constituted Stream Pollution Control Board has been given substantial powers to prevent the pollution of streams, "with any substance which is deleterious to the public health or to the prosecution of any industry or lawful occupation, or whereby any fish life or any beneficial animal or vegetable life may be destroyed, or the growth or propagation thereof prevented or injuriously affected."[39]

Comment upon the extent of work which municipalities may be compelled to undertake by either the State Board of Health or the Stream Pollution Control Board should be based upon the relative differences in the state of development of water supplies as compared with sewage treatment. It would seem reasonable to expect that water extensions would be left largely to the discretion of municipalities. While there is room for a great deal of very strong influence, at least, to speed up the building of sewage treatment plants, the composition of the Stream Pollution Control Board would give ground for the expectation that its action would be dominated by the attitude of the layman and that it could not be expected to move more rapidly than is dictated by general public opinion. The board is composed of the lieutenant-governor, the secretary of the State Board of Health, the director of the Department of Conservation, and three members appointed by the governor. The statute provides that the board is to be served by a technical secretary who is to be a graduate sanitary engineer and who is to be appointed to that position by the secretary of the State Board of Health. He is required by the statute during interims between meetings of the Stream Pollution Control Board to handle "such correspondence, make or arrange for such investigations and surveys and obtain, assemble or prepare such reports and data as the board may direct and authorize."[40]

For a municipality to have the bare legal power to construct water and sewer systems is not in itself sufficient. These systems cost money. Municipalities must also have the legal authorization to finance such systems if they are to be municipally owned and operated. Consequently, matters relating to the problems of finance will be the subject matter of the next section.

[38] Horack, 35-201-5.

[39] Burns, 1943 Replacement, 68-520; the Board was created in 1943, See Burns Replacement, 68-517.

[40] Acts 1943, ch. 214, sec. 3, p. 624; Burns 1943 Replacement 68-519.

VI

GENERAL AUTHORITY TO FINANCE SEWER AND WATER SERVICES

General Legal Authority

In general, municipalities have the legal authority to raise and appropriate money to pay for improvements which they are empowered by law to construct. The Act of 1905 set forth three methods of raising money to provide water supply and sewerage. They are: (1) taxation[1]; (2) borrowing on the general credit of the municipality[2]; (3) assessing the cost of the improvement, particularly when sewers are to be financed, against the property benefited.[3] In addition it provided for the use of surplus water-works revenues for plant extension.[4] Collections of water rents from users of water were authorized to pay the expense of managing and operating the water works. Surpluses, after the payment of managerial costs, could then be employed to repair, enlarge or extend the works, to pay the interest or principal of any loan incurred for the construction of water works, or to create a sinking fund for the liquidation of any such debt. This latter method of financing was a forerunner of the full revenue method which was set up later. Furthermore, the Act of 1905 provided for cities to supply themselves with water and sewerage facilities by the use of private capital, that is by contracting with private individuals or corporations to provide water and sewerage[5] or to use some of the above enumerated methods of procuring money in order to cooperate with private capital, that is municipalities were authorized to acquire stock in private corporations to supply water and "other public conveniences."[6]

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[1] Acts 1905, ch. 129, sec. 31, cl. 3, p. 219; Burns 48-301; sec. 35 Burns 48-6804; sec. 36, Burns 48-6805; sec. 58, Burns 48-1701; sec. 199, Burns 48-6707; sec. 200, Burns 48-6708; sec. 201, Burns 48-6710; sec. 235, Burns 48-8008; sec. 257, Burns 48-7209; sec. 267, Burns 48-503.

[2] Acts 1905, ch. 129, sec. 31, cl. 3, p. 219, Burns 48-301; sec. 35, Burns 48-6804; sec. 36, Burns 48-6805; sec. 55, Burns 48-1410; sec. 235, Burns 48-8008; sec. 249, Burns 48-7201; sec. 257, Burns 48-7209.

[3] Acts 1905, ch. 129, sec. 118, Burns 48-3902; sec. 119, Burns 48-3903, sec. 120, Burns 48-3904; sec. 265, Burns 48-2745; sec. 267, Burns 48-503.

[4] Acts 1905, ch. 129, sec. 139, p. 219, Burns 48-5401.

[5] Acts 1905, ch. 129, sec. 85, p. 219, Burns 48-1507; sec. 93, cls. 9, 11, Burns 48-1902; sec. 253, Burns 48-7301; sec. 254, Burns 48-7302.

[6] Acts 1905, ch. 129, sec. 254, p. 219; Burns 48-7302; also see sec. 93, cl. 8, Burns 48-1902.

Later acts After 1905 the General Assembly, from time to time authorized municipalities to use other devices described elsewhere for financing construction such as complete revenue financing, the creation of special taxing districts, or the establishment of separate corporate entities for the supply of certain services.

Constitutional Restrictions on the Borrowing Power of Municipal Corporations

Although the powers to establish and finance public works in municipalities are conferred by statute and the legislature is free to grant or withhold powers, one cannot understand with full appreciation the devious existing methods of financing such works without some knowledge of the background of constitutional limitations on municipal borrowing and the judicial interpretations of the limitations. The principal limiting provision in the constitution is as follows:[7]

> No political or municipal corporation in this State shall ever become indebted in any manner or for any purpose to an amount in the aggregate exceeding two per centum on the value of the taxable property within such corporation, to be ascertained by the last assessment for State and county taxes, previous to the incurring of such indebtedness; and all bonds or obligations, in excess of such amount, given by such corporation shall be void: *Provided,* That in time of war, foreign invasion, or other great public calamity, on petition of a majority of property owners, in number and value, within the limits of such corporation, the public authorities in their discretion may incur obligations necessary for the public protection and defense, to such an amount as may be requested in such petition.

This constitutional limitation appears at first to be so sweeping, and exceptions of an ordinary character are so specifically forbidden that there could be only one conclusion—namely, cities and towns may become indebted not to exceed two per cent of their assessed valuation. Therefore, it may be a shock to those unacquainted with the niceties of constitutional interpretation to find that in the aggregate Indiana cities are already indebted practically, if not technically, in an amount equal to more than four and one half per cent of their assessed valuation. There could be then, a feeling that further discussion of the legal powers for local financing is quite useless for most Indiana cities.[8] However, a casual examination

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[7] Constitution of the State of Indiana, Art. 13, sec. 1.

[8] The total gross indebtedness of cities as shown by the *Statistical Report* for 1942 is $95,566,005.57 and the net assessed valuation is $220,072,217.00; the indebtedness amounts to 2.75 per cent of the assessed valuation.

Ways of avoiding the limitation of practice and case law will quickly reveal that the above quoted constitutional provision is not a bar to any community which may need and wish to acquire, extend, or construct water works, sewers, and sewage treatment plants. Four methods which cities and towns have been authorized to use in order to lift community indebtedness beyond the two per cent limit set by the constitution on civil cities and towns will be mentioned. By community indebtedness, as distinguished from civil city or town indebtedness, we mean any debt the making of which requires some positive action on the part of the policy-forming branch of the city or town government and the burden of which rests, in its final analysis, upon all or a substantial portion of the property or persons within the corporation.

a. Revenue bonds One means which municipalities in Indiana in company with those of many other states have been using to finance the kind of construction under consideration here is the so-called revenue bond. A revenue bond is usually specifically stated not to be an obligation of the municipal corporation but is payable exclusively from the revenues generally of a specified income-producing property. It is not a direct debt of the municipality and there is no recourse to any taxing power for payment. The obligation may be incurred for the acquisition, construction, or improvement of the income-producing property.[9] The Indiana Supreme Court exhibited a willingness to give a liberal construction to the two per cent debt limitation provision shortly after it was added to the Constitution when debt secured by revenue bonds was being considered. For example in 1896 the court said: "Obligations payable out of a particular fund, and for which the fund only and not the municipality is liable, are not within the inhibition."[10] Whether bonds payable solely out of the revenues from the operation of a a concern owned and operated by a municipal corporation constitute a debt of that corporation has been an issue passed upon several

[9] For a short general statement of the origin, scope, and growth of this financing device in the United States see *Revenue Bond Financing by Political Subdivisions,* United States Printing Office, Washington; 1936 (98968-36-1). The term revenue bond "refers exclusively to special obligations of political subdivisions, municipal and public corporations which are payable solely from the revenues of an income-producing public project or system and issued for the purpose of financing the acquisition, construction, extension, or improvement of each project or system." (Adolph H. Zwerner, "Indiana Municipal Bond Financing," 12 Indiana Law Journal 266).

[10] City of LaPorte v. the Gamewell Fire Alarm Telegraph Company, 146 Indiana 466 (1896) at p. 471; and earlier case is Quill v. Indianapolis *et al,* 124 Ind. 292, (1890).

times by the court, and each time the court has declared that such bonds do not constitute such a debt.[11]

b. Barrett assessment

Another means of borrowing in excess of two per cent of the assessed valuation is by way of special benefit assessment, known in Indiana as the Barrett law assessment. By this procedure the cost of the improvement is assessed against benefited property, the share of the total cost which is charged to each piece of property being determined, presumably, by the proportionate benfit accruing to it. The Indiana Supreme Court has quite consistently approved this method of financing, and as consistently, has refused to admit that the obligations assessed against the property are a debt of the municipal corporation in which the property is situated; therefore the constitutional debt limitation does not apply.[12]

c. Special taxing districts

A third method of increasing community legal borrowing capacity within constitutional bounds is through the use of the special taxing district which district may be coterminous with the municipality. The sanitary district is an example. The indebtedness of the district is not an obligation of the city or town and since the district is in the nature of a "special benefit" area and is itself not a municipal corporation the two per cent limit does not apply to it. In other words there is no specific constitutional limit on the borrowing powers of a special taxing district.[13]

d. Lease purchase contract

A fourth means of increasing the total community debt without in any way raising the issue of constitutionality is through the establishment of a company which makes the improvement desired and leases it to the municipal corporation, which cannot itself incur the debt.[14] The state Supreme Court has approved such a procedure for a municipal corporation.[15]

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[11] Fox v. City of Bicknell 193 Ind. 537 (1923); Underwood v. Fairbanks Morse & Co., 205 Ind. 316 (1933); Letz Mfg. Co. v. Pub. Ser. Com. of Ind., 210 Ind. 467 (1936); Bennet v. Spencer County Bridge Com., 213 Ind. 520 (1938).

[12] Quill v. Indianapolis, 124 Ind. 292 (1890); Board of Com., Monroe County, v. Harrell, 147 Ind. 500 (1897).

[13] An early case in which the validity of the debt of a special tax district was upheld was Board of Commissioners v. Harrell 147 Ind. 500 (1896).

[14] Jefferson School Township v. Jefferson Township School Building Co., 212 Ind. 542 (1937).

[15] See also Hively v. School City of Nappanee, 202 Ind. 28 (1930). In this case the issue is discussed as to whether an obligation, if it does not currently exceed the debt limit, may be undertaken to make annual payments over a period of years, the total of which if due when the first payment was made would obviously exceed the debt limit.

In closing this rapid review of the constitutional methods of incurring debts certain observations may be made.[16] The two per cent debt limitation clause is a part of the constitution and may not be disregarded. Debts which are incurred in violation of it are void.[17] However, under the imperious need for the contemporary solution of problems as they arise, the courts have construed the limitation narrowly, and ways for local communities to borrow money in excess of two per cent of their assessed valuation have been marked out clearly.

Effect of restrictions It may be concluded, therefore, that any community needing water works or sewerage construction should first consider that construction solely on its merits, such as: is there need for it; can it be paid for without undue burden; will the labor costs of the improvement have to be paid out as direct relief if the improvement is not made, etc. If in answer to these questions, it is determined that the improvement is needed, then it becomes a problem for an attorney to find ways of raising money within the four corners of the constitution and in accordance with statutory law.

Statutory and Administrative Restrictions on the Powers of Municipalities with regard to Finance

In the foregoing chapter attention was directed to the general legal authority of cities and towns to finance sewerage and water systems. Such authority is seldom absolute. Its exercise is generally subject to administrative supervision either at the state or local level. Furthermore, arbitrary limits on specific or over-all tax rates are sometimes prescribed by law. These factors cannot be ignored if

[16] Other means for raising the borrowing power of communities for other purposes have been used. Perhaps the first was that of adding an additional corporation; Campbell v. Indianapolis, 155 Ind. 186 (1900). Apparently the first case in which this principle was stated was: Wilcoxon v. City of Bluffton, 153 Ind. 267 (1899). The question arose as to whether the indebtedness of the school city was included in the debt of the civil city, if so, a contemplated issue of water works would raise the debt beyond the two per cent limit. The court held that the two cities were separate. Other cases are Heinl v. Terre Haute, 161 Ind. 44 (1903); Caldwell v. Bauer, 179 Ind. 146 (1913); Hutchins v. Tremont, 194 Ind. 74 (1924); Follett v. Sheldon, 195 Ind. 510 (1924). A more recent method in the establishment of a special authority is Edwards v. Housing Authority of the City of Muncie, 215 Ind. 330 (1939).

[17] There are many illustrations in which corporations have attempted to borrow contrary to the debt limitation of the constitution. A few cases in which the matter was finally determined are: City of Logansport v. Jordan 171 Ind. 121 (1908); Angola Brick and Tile Co. v. Millgrove School Township 73 Ind. App. 557 (1920); Caldwell v. Bauer 179 Ind. 146 (1913).

one is to secure a complete picture of the process of financing municipal public works programs.

Tax rate ceilings Two such tax limitations have been imposed by statute upon Indiana municipalities. The first is a limitation on the maximum tax rate which municipalities may levy to raise money for such corporate purposes as street, light, water, and general municipal functions. The second is an over-all tax rate which is the total tax, exclusive of special assessments, that may be levied within the corporation on property. This includes the tax collected for state purposes which is prohibited by statue from exceeding fifteen cents on each one hundred dollars of the assessed valuation,[18] and levies for county, school corporation, township, and any special taxing districts, as well as the city or town corporate levies.

a. Corporate rates The maximum town corporate rate was set by the Act of 1905 at fifty cents on each one hundred dollars valuation plus some dog and poll levies.[19] Later it was raised to one dollar and twenty-five cents where it now is.[20] The maximum corporate rate for cities, except for a city of the first class, was set at one dollar and twenty-five cents in 1905 and has not been changed.[21] Exceptions, however, were permitted for rates in excess of the maximum, for example, the council was empowered if necessary to add to the maximum rate to raise money to satisfy judgments against the city. Later, others have been added as will be noted in the next paragraph.

Effect of corporate tax ceilings There are several reasons for saying that the maximum rates which municipalities may set for corporate purposes do not constitute much of a bar to raising funds for the kinds of improvements being discussed here. In the first place, the great majority of municipalities now make corporate levies well under the maximum. For example, the corporate rate of Bloomington is one dollar and seven cents leaving a leeway of eighteen cents which, if needed, could be added to the corporate rate for financing water and sanitary improvements. In the second place, when the corporate limit was established in the Act of 1905,

[18] Acts 1937, ch. 119, sec. 1, p. 646; Burns 1943 Replacement 64-307. The state levy for 1944 was eleven cents and has been further reduced for future levies as fixed by the State Board of Finance.

[19] Acts 1905, ch. 129, sec. 31, cl. 18, p. 219; Burns 48-301.

[20] Acts 1941, ch. 176, sec. 1, p. 532; Burns 1943 Supplement 48-6806.

[21] Acts 1905, ch. 129, sec. 200, p. 219; Burns 48-6708. The maximum rate for Indianapolis was set at ninety cents in 1905; in 1911 it was reduced to seventy-five cents, in 1943 the limitation was removed entirely. Acts 1941, ch. 213; Burns 1943 Supplement, 48-6728 *et seq.*

exceptions were made; since that time, others have been added. For example, once direct obligation bonds have been issued, tax levies to service them are excepted from these statutory limitations.[22] The result is the corporate levy in any city or town may include specific items which would need to be excluded if one were attempting to find how much could be added to the corporate levy for water and sanitary construction. To find what all the exceptions are and how they apply to each municipality would be such a complicated matter, that if necessary to get relief from the corporate tax ceiling, it might be easier to go to the legislature and either ask for clarifying legislation, or another exception to be made for levies for water and sanitary construction—a practice the authors feel sure has been followed before by Indiana municipalities.

A third reason why the corporate tax limits do not constitute a bar to levying taxes for the purposes of water and sewerage construction is that the corporate limits for towns can be raised by administrative action. The most recent act relating to the maximum corporate rate for towns contains the following clause: "Provided, however, That in case of an emergency the county board of tax adjustment, subject to approval of the state board of tax commissioners, may fix such levy at a rate in excess of said one dollar and twenty-five cents."[23] So far as the statute is concerned, what constitutes an emergency is left to the discretion of the tax adjustment and state tax boards. Consequently, a town wishing to make a levy to build up a fund to improve or construct water or sanitary facilities is not prevented from doing so even should its corporate levy be at the maximum, if its officials will make a convincing appeal to the county tax adjustment and state tax boards.

b. Over-all tax rates

The maximum over-all tax rate limits present a problem which appears at first examination to be more serious. The two-dollar rate ceiling is approached or surpassed by practically all of the municipalities in the state. According to the *Statistical Report* for 1942 (the most recent one available at this writing) there are only three cities and thirty towns out of the total of more than 530 municipalities listed as having over-all tax rates within the statutory limit, that is of two dollars or less. There would actually be more if account were taken of the statutory exceptions figured in the published rates. The fact that many cities and towns do exceed the maximum indicates that there is a way of raising the ceiling. The way of doing this is provided by law.

[22] Acts 1937, ch. 119, sec. 11, p. 646; Burns 1943 Replacement 64-317.
[23] Acts 1941, ch. 176, sec. 1, p. 532; Burns 1943 Supplement 48-6806.

Method of raising these ceilings

The county tax adjustment board is required "to examine, revise, change or reduce, but not increase"[24] the budget of each municipal corporation within the county. It is particularly charged with the duty "to limit the aggregate of the tax rates in accordance with the provisions of this act [two dollars]: Provided, however, That if said board shall, as a result of its analysis . . . of the budget . . . of any municipal corporation . . . come to the conclusion that the rate of taxation as limited by the provisions of this act is inadequate or that there be reasonable necessity for an increase of the aggregate rate, then, in that event, the tax adjustment board shall submit in writing such recommendations . . . to the state board of tax commissioners . . . ."[25]

However, if the tax adjustment board decreases the levy set by the municipal corporation, its officials are authorized to take an appeal to the State Board of Tax Commissioners. But whether the budget is certified to the state board by the county adjustment board or is sent there on appeal by the officials of the municipality, the state board after following prescribed procedure, is empowered "to revise, change or increase any levy and rate as petitioned for, . . . within the limit of the levy and rate originally fixed by" the corporation.[26]

Attention may be drawn to the standard set in the statute to guide the county tax adjustment board in its review of budgets. If it finds that the tax rate as limited provides an "inadequate" income for the corporation "or that there be reasonable necessity for an increase of the aggregate rate," then it is to recommend a lifting of the ceiling by transmitting the budget to the state tax board. No standard is set by law to guide the latter board. It is therefore to use its own discretion.

Tax levies for building

There has been some disposition among spokesmen for Indiana cities and towns to seek definite and clear-cut statutory authorization to build up a surplus from tax revenues for the construction of improvements.[27] However, despite the call for such action, the special session of the General Assembly which met in 1944 did not legislate in regard to this matter. However, it would seem that if town and city budget makers are of the opinion that a fund should be accumulated for construction or extension purposes, they are free to include a sum for

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[24] Acts 1937, ch. 119, sec. 5, p. 646; Burns 1943 Replacement 64-311.

[25] Acts 1937, ch. 119, sec. 5, p. 646; Burns 1943 Replacement 64-311.

[26] Acts 1937, ch. 119, sec. 8, p. 646; Burns 1943 Replacement 64-314.

[27] See Maurice Early, *Indianapolis Star,* January 2, March 2, 5, 9, 1944, col. 1.

that purpose when their budget is prepared. When the rates are calculated, if the over-all rate exceeds the two dollar limit as practically all of the municipal rates now do, the county tax adjustment board must either reduce the rate to the two-dollar limit or certify the budget to the State Board of Tax Commissioners, a board which is appointed and may be removed by the governor.[28] With the broad powers cities and towns now have to levy taxes and appropriate money for municipal purposes, we believe such corporations can provide money for immediate preliminary planning if not for postponed construction of water works and sewerage systems. To do this the local governing body must show a willingness to place the item in the budget, and the State Board of Tax Commissioners must recognize the need for the tax levy when local budgets are reviewed by it.

Administrative supervision of municipal borrowing Not only may the budgets and tax rates of cities and towns be reviewed and revised by a state agency, but also proposed bond issues of such corporations may be subject to review, revision, or even vote. Under the so-called "Indiana Plan" of review of local borrowing, if "any municipal corporation . . . issue any bonds or other evidences of indebtedness . . . [which] it may deem necessary . . . ."

a. By the State Tax Board exceeding five thousand dollars, ten taxpayers may file a petition in order to have the purpose or the amount of the issue reviewed by the State Board of Tax Commissioners.[29] After a hearing the board is to determine whether the bonds may be issued, and if so, the amount. The decision of the board is "final." Furthermore, all issues of bonds bearing interest in excess of five per cent must be approved by the board, regardless of any petition of interested citizens,[30] but no issue may bear more than six per cent interest.

b. By the Public Service Commission A much less significant provision for state review is that providing that cities of the fifth class under certain circumstances may not issue revenue bonds for the addition or extension of water works until the approval of the Public Service Commission has been secured. The approval in the cases when it is required is a certification that the income from the water works will be sufficient to pay costs of

[28] Acts 1943, ch. 125, sec. 2, p. 379; Burns 1943 Replacement 64-1341.

[29] Acts 1921, ch. 222, sec. 4, p. 638; also Acts 1923, ch. 93, sec. 1, p. 264; Burns Replacement 64-1332.

[30] Acts 1923, ch. 93, sec. 1, p. 264; Burns Replacement 64-1332; Citizens Bank v. Burnettsville, 98 Ind. App. 92, (1932).

operation, maintenance, and depreciation and to pay principal and interest of bonds that may be sold.[31]

Miscellaneous limitations There are specific statutory limitations and requirements or both which must be observed by a municipality wishing to finance extensions or new construction. Practically every statute concerned with the manner of financing the kind of improvements being considered here has some kind of limitation. Some examples chosen more or less at random will be given. If a

a. Statutes to be observed faithfully city or town wishes to construct a sewerage system under the Revenue Act of 1932, it must take sufficient funds from the first proceeds of the sale of bonds to replace moneys used to pay preliminary costs;[32] it must use such funds as are provided in the act to meet obligations incurred in the building of such sewerage systems.[33] Illustrations such as this show that once a statute has been chosen, then all procedure prescribed by that act is to be followed. Referring again to the Revenue Act of 1932: this statute as indicated by its title and content was meant to provide a particular method of financing the construction or extension of sewage treatment plants. Incidentally, the act, particularly as amended,[34] provided for the construction of sewers in order to collect and treat sewage. Consequently, it is submitted that a municipality attempting to build a system of sewers without a treatment plant but at the same time using the methods of financing as provided for in that act, would likely find that its bonds were void. Likewise in other statutes, a method of management may be provided, such as the Water Works Department Act of 1933.[35] Should a municipality elect to exercise the powers granted by it to set up a department, then a board is to be appointed which is to have the exclusive management of water works, and the matters relating to finance in the act are to be followed explicitly by the board.

b. Debt limit for special districts Another type of limitation is a debt limitation for the special taxing districts. Since these districts do not constitute a municipal or political corporation within the meaning of the constitution, the only legal limit to the

[31] Acts 1933, ch. 259, sec. 11, p. 1147; Burns 48-5451; Letz Mgn. Co. v. The Public Service Com., 210 Ind. 467, (1936); also see 1936, Op. Atty-Gen., p. 38.

[32] Acts 1932, ch. 61, sec. 4, p. 209; Burns 48-4304.

[33] Acts 1932, ch. 61, sec. 8, p. 209; Burns 48-4308.

[34] Acts 1935, ch. 198, sec. 1, p. 967; Burns 1943 Supplement 48-4301.

[35] Acts 1933, ch. 235, p. 1063; Burns 48-5301 *et seq.*

amount of debt which may be incurred by them is that established by statute. An example is found in the Sanitary District Law of 1917,[36] which at the time of its enactment provided that bonds might not be issued in excess of eight-tenths of one per cent of the total assessed valuation of the property within the district.[37] Recently it has been amended to permit indebtedness up to two per cent of the assessed valuation of the property within the district.[38]

c. Petitions for bond issues The popular approval of the issuance of bonds or other policy matters has never been widely used in Indiana. However, a law enacted in 1937 makes it possible for a majority of the voter-taxpayers in a municipality to veto any bond issue which is to be financed through a tax levy.[39]

d. Review by State Board of Accounts It has already been mentioned that the failure to follow the law specifically in the issuance of bonds may result in their being void. The embarrassment both to the holder of worthless bonds, to the municipality issuing them, and the damage to its good name and credit are not the only considerations envolved. Such action may damage the credit of other municipalities in the same region or in the whole state. It is just as important to follow the law specifically with regard to the management of finances other than that concerned with indebtedness and bond issues. An official who does not follow the law specifically with regard to the handling of public money may be made personally responsible for money honestly but illegally expended. For certain types of misuse of public funds, the official might even become criminally liable. Under American practice citizens might complain or grand juries might investigate if an official was suspected of mishandling public funds. However, in Indiana an administrative agency has been set up to perform this function, among others, in behalf of the public. The agency is the Department of Inspection and Supervision of Public Offices, commonly called the State Board of Accounts. It is required that "all accounts and all financial affairs of every public office" be examined "at least once each year" to find "whether the laws of the state and the requirements" of the board of accounts have been

[36] Acts 1917, ch. 157, sec. 1, p. 573; Burns 48-4201 *et seq.*

[37] Acts 1917, ch. 157, sec. 17, p. 573; Burns 48-4217.

[38] Acts 1943, ch. 107, sec. 3, p. 332; Burns 1943 Supplement 48-4217.

[39] Acts 1937, ch. 119, sec. 7, p. 646 as amended 1939, ch. 97, sec. 1, p. 507; Burns 1943 Replacement 64-313.

"complied with" and to inquire "into the methods and accuracy of the accounts and reports of the office examined."[40]

Effect of limitation on general powers

Constitutional and statutory restrictions and administrative prescriptions on the power of cities are causative factors in the growth of the maze of statutes relating to water and sewerage systems enacted since 1905. In many cases cities, and in fewer cases, towns, have exhausted their powers, for example, to borrow; or they find that general limitations leave them in a weak position. Consequently, they have gone to the General Assembly with their special problems to seek ways of avoiding general limitations, or for grants of power to meet a special set of circumstances. The legislature has responded frequently by enacting a statute calculated to ease the way around a particular difficulty but also in many cases, it added a detailed procedure which the city, perhaps along with other cities, was required to follow. Some of these detailed procedures will be illustrated in other sections of this study.

[40] Acts 1909, ch. 55, sec. 9, p. 136; Burns Replacement 60-211. Although the law requires annual inspection, it is not always possible because of shortage in field examiners to do this. However, the examination is complete even though more than a year has elapsed between visits of the field examiners.

VII

SUGGESTIONS FOR GETTING STARTED

Should one merely glance hurriedly through the pages of this pamphlet, he could hardly escape the conclusion that the legal work connected with the construction, or even the operation of a water works or a sewerage system is technical and complicated. But it is no more technical nor complicated than is the engineering work involved, particularly, in the design and construction of such plants. While the legislature changes the law almost every session with regard to powers or procedures of municipalities, inventors, engineers, chemists, operators and others are continually finding improvements in procedures and equipment for the supply and purification of water and the collection and treatment of sewage and trade wastes. These improvements are the signs of progress. And while the statutes relating to municipal powers are needlessly complicated in Indiana, the experience of the centuries has shown that the exercises of governmental powers and the protection of private rights can never be simple because human relations are complicated.

The necessity for having competent engineering service in connection with water supply and sewerage projects finds legal recognition in law in the two following clauses quoted from an act of 1935:[1]

> . . . no . . . city, [or] town . . . shall engage in the construction or maintenance of any public work involving professional engineering . . . for which plans, specifications and estimates have not been made by and the construction and maintenance supervised by a licensed professional engineer . . . .
>
> No official of . . . any city, [or] town, . . . charged with the enforcement of any law, ordinance, or regulation relating to the construction or alteration of buildings or structure, shall use or accept or approve any plans or specifications that have not been prepared by or under the supervision of a registered professional engineer or registered architect and stamped with the seal of such registered professional engineer or registered architect.

Thus the law places a floor under the minimum competence necessary for engineering work; but the highly specialized functions of designing, preparing plans and specifications, and making cost estimates for many water works and sewerage problems make it imperative that a municipality secure the services of a consulting engineer and thus do more than meet the minimum legal requirements.

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[1] Acts 1935, ch. 148, sec. 19, a and c pars., p. 510; Burns 1943 Replacement 63-1535.

Technological advances in this field are of such importance that no city or town can afford to construct a plant which because of such advancements is out of date even before it is completed. Very few city or town engineers can be expected to keep completely up-to-date on these improvements. In many cases it would take a considerable part of the salary which is paid to these officials for them to try to keep abreast of changes in water and sewerage services alone, not to mention the other fields of endeavor in which the engineer in general practice needs to be informed.

The requirement that municipalities have competent legal advice comes indirectly from the law, but is enforced by a more exacting and imperious mandate, economic law. A recent statute requires that "all bonds hereafter issued by or in the name of . . . cities, or towns . . . and special taxing districts, or agencies or instrumentalities thereof, whether the same be general obligations or issued in anticipation of the collection of special taxes or be payable out of revenues, shall be sold at public sale . . . ."[2] This statutory requirement, coupled with the general legal proposition that bonds issued contrary to law may be worthless, provides the basis for the law of the market which compels municipalities to get the so-called "bond opinion." This bond opinion is the approval of the bond issue by a recognized bond attorney, which is necessary before the bonds will sell at "public sale." Bond handling establishments, as a general practice, do not buy bonds unless the legality of the issue has been approved by an attorney in whom they have confidence.

An example of the pitfalls awaiting the municipality which tries to get along without the opinion of a bond attorney may be seen by referring to an act of 1929.[3] Bond buyers, it is said, object to the amortization plan set out in section 2 of this act. No one but a person who has had opportunity to observe the sale of bonds would be likely to have this information, consequently, bonds issued under this act probably would not sell at all.

It may be observed that both the city engineer and the city attorney, like many members of other professions, such as medicine, are general practitioners. The body of knowledge with which they must be reasonably familiar is too vast for them to be able to deal in detail with all problems, and as is the case with general practitioners in the medical profession, they must have the assistance of specialists in a particular branch when problems of an exceptional

[2] Acts 1943, ch. 178, sec. 1, p. 538; Burns 1943 Replacement 61-413.

[3] Acts 1929, ch. 135, p. 441; Burns 1943 Replacement 61-401. Another act bond attorneys frown upon is Acts 1937, ch. 72, p. 395; Burns 1943 Supplement 48-5455.

nature arise. The specialists in this instance are consulting sanitary engineers and bond attorneys.

In making the decision as to whether construction or extension is to be undertaken, frequently there are two stages. The first is the informal or "caucus" stage. It is at this point that the city or town attorney or some other official of the municipality is directed to inform himself as to the possible procedures which might be followed. In informing himself, he should, if possible, advise with a recognized bond attorney, a competent consulting sanitary engineer, and the State Board of Health. The bond attorney, when he is told of the kind of improvement which is being considered will advise as to types of financing available, condition of the bond market and probable interest rates, and particularly what the initial formal steps should be. The engineer or the State Board of Health will discuss the kinds of information which will need to be gathered, and the usual methods of obtaining it. Usually without an engineering investigation no definite answer can be given from an engineering standpoint as to the practicability of the proposed project. In such cases the consulting engineer may need to conduct surveys and gather other data in order to make what is called an engineering report. It is on the basis of this report that the municipality is able to reach a final decision as to whether the project should be prepared for construction.

A word of caution may be added with regard to the engineer's report, namely, that some officials feel that this is as far as they need to go in preparing now for subsequent construction. But as has been indicated, this report is just the beginning.

Should the council, or board of trustees become satisfied that the improvement being contemplated is necessary, possible, and sufficiently practicable to merit proceeding further, then comes the second or formal stage. The necessary preliminary ordinances and resolutions are then passed and the services of a competent consulting engineer are secured to design the required improvements and to prepare plans and specifications. The engineer who prepared the preliminary report should be retained for this work. In fact, many competent engineers decline to make the engineer's report except on the condition that if the project is carried to completion, they will be employed for the preparation of plans and specifications and the supervision of construction. In this way they are able to make the preliminary engineering report for a smaller consideration than would be possible if their assignment should include only the preparation of the report.

The engineer should be employed either to handle the project independently, or with the assistance of the local engineer. In most instances, when adequate information as to necessity, etc., is available, it will be advisable for the municipality to proceed directly to the second or formal stage without the preparation of a formal preliminary report. It is desirable that this be done only in those cases when the circumstances are such that there is little or no question regarding the necessity or scope of the contemplated project.

An experienced bond attorney, except in certain cases later discussed, should be retained in the early stages of the proceedings if the city or town expects to finance the project through borrowing. Every legal step in the process, if the construction is eventually undertaken, will of necessity be under scrutiny by a bond attorney before he can give an opinion, or by a court if the matter is litigated. There are numerous cases in which municipalities have failed to proceed exactly as specified by statute, for example, failing to do the required advertising before bonds were offered for sale, with the result that they have had to readvertise two or three times before attaining the precise steps as set forth in the statute—steps which a competent bond attorney would have pointed out in the first place. If a competent bond attorney has been retained at the proper time, he will then be available to the local attorney in the preparation of ordinances, contracts, etc., and to advise as to the proper statute or statutes under which to proceed.

There are two conditions under which the service of a recognized bond counsel may not be so nearly indispensable at every step in the procedure. First, should the initial investigation show that the most advantageous method of financing the construction is through the sale of general obligation bonds, it may be that the city attorney is experienced in handling such bonds. But even then reputable bond buyers will require an "opinion" of recognized bond counsel before acquiring such securities. Second, if a municipality has been sufficiently foresighted to build up a fund to finance such construction from tax sources or the receipts from the operation of a utility, then the services of specialized legal counsel may be necessary only in special cases.

A word properly may be said with regard to the qualifications of the consulting engineer or engineering firm, and the expert bond counsel and the conditions under which their services may be obtained. In the first place, consideration should be given to the experience and professional background of the persons or firms chosen. It is important to select an engineering consultant who not only is

competent in the technical field but also is experienced in organizing and establishing projects of the type under consideration. The selection should not be on a competitive basis. One incompetent in the field may cost the city in construction costs much more than can be saved through a lower fee. Furthermore, it is not proper to ask engineers to present competitive bids since it is a violation of their own code of ethics to do this. As to the qualifications of the bond counsel, he must be well versed in Indiana municipal law to the end that his opinion will be accepted as authoritative by bond brokers and investment bankers or others interested in the purchase of bonds.

After having determined which consulting engineer or engineering firm is to be retained, the municipality should enter into an engineering contract for the preparation of complete plans and specifications. Before the plans and specifications can be approved by the Indiana State Board of Health and before revenue bonds can be sold, it will be necessary that the engineer prepare a report describing the project in detail, setting forth design factors and presenting technical data justifying the design which is to be followed. If such data were included in a preliminary report, usually no further report is necessary. The engineer should, as soon as he has determined the estimated cost of the proposed improvement, provide the information to the local attorney and bond counsel so that they may advise, with respect to type of bonds, interest rates and amortization provisions.

The following example of part of the detailed procedure required of the consulting engineer in developing a sewage treatment plant project is set forth since it illustrates principles involved in other projects. This work will supplement that of preparing designs, and plans and specifications.

(a) The engineer first must decide the scope of the territory that will contribute the sewage to be collected and treated, and must estimate the amount of surface water and runoff, if the sewers are to carry both sewage and storm water. This will involve a decision as to whether a combined system will be built, or whether a separate system will be constructed with sanitary sewers collecting the surface water and discharging it to the nearest water-course without treatment. At the same time flow measurements must be taken in existing sewers to determine definitely the amount of sewage to be treated. Estimates also must be made of the probable amount of sewage to be treated during a period of from 10 to 15 years in the future.

(b) After the amounts of sewage have been estimated, the characteristics of the sewage must be studied. Laboratory analyses should be made of all sewage and industrial waste to determine their character-

istics. From these determinations the type of sewage treatment to be provided can be selected.

(c) After ascertaining the number of immediate and potential users, rate schedules must be fixed in order to realize sufficient funds to amortize the investment if the bond issue is the revenue type.

(d) While this investigation of the type of treatment, the size of the plant, and the amount of money required is in progress, the engineer should be in constant touch with the city attorney and with the bond counsel, who will help to decide definitely which statute and method of financing is most applicable to that particular project. Resolutions and ordinances must be prepared by the attorney in collaboration with the bond counsel so that each step as provided under the statute chosen may be followed meticulously.

The closeness of the relationship between the work of the consulting engineer and the bond attorney may not be apparent to the layman or even to the lay-official. Their relationship can be illustrated in the case of revenue bonds by the fact that the bond contract must contain a schedule of rates for the utility. These rates are based, of course, upon data prepared by the engineer. Also it is obvious even to the uninitiated, that a bond buyer would require data showing the potential earning capacity of a project before he would buy revenue bonds.

These data also are provided by the engineer. Every legal step could be perfectly executed and still a community would find that its bonds would not sell if the financial and engineering work were unsound, and, conversely, the engineering work could be carefully executed and a sound financial structure established, yet the bonds would still be of doubtful value if the legal proceedings were questionable.

It is not the intention of the authors to make the engineering or legal preparations appear to be impossible or even unusually difficult, because, as has been pointed out in other sections of this monograph, some 430 municipalities in Indiana have satisfactorily constructed some type of water or sewerage plant or both. It is our purpose to indicate that the work of municipalities, like the work of other important social and political organizations, requires in some instances specialized knowledge possessed only by those who spend their time and energies in those particular fields.

Our municipalities are our homes and they are worthy of the best.

VIII

THE CITIES AND TOWNS OF THE STATE WITH DATA AS TO THEIR INDIVIDUAL SANITARY AND FISCAL CONDITIONS

The purpose of the list of cities and towns in the following pages is to supply elementary data with regard to water, sewers, and sewage treatment plants along with similar elementary data with regard to the financial situation of each municipality.

These data were collected from a number of sources. To make the compilation complete and current, several different published reports and office files were examined. The 1940 United States Census tabulation was nearly complete; to it were added a few names from the latest issue of the *Statistical Report of the State of Indiana,* and also a few places from the reports on file in the offices of the Auditor of the State and the State Board of Health. The general location of each municipality is indicated by listing the county in which it is situated. The population, when available, is given for both 1930 and 1940 in order to indicate any observable trend in population in the ten-year period.

The data with regard to the water supplies of cities and towns in Indiana were taken principally from the "Annual Report of the Bureau of Sanitary Engineering," now the Division of Environmental Sanitation, as published in the *Indiana Yearbook* for 1942. This source was supplemented by the Indiana State Board of Health *Bulletin S.E. 10,* which contains information on all Indiana ground water supplies, and from the files of the State Board of Health.

The mark "X" in the column headed TREATMENT under WATER SUPPLY indicates that a city or town has water treatment; it does not refer to the quality of treatment. The treatment may be inadequate, or it may be sufficient for certain purposes but not others.

For the type of treatment, if any, in use for each public water supply see the annual reports of the State Board of Health in the *Indiana Yearbook.*

Most of the public water supplies in Indiana are municipally owned; they are designated by the letter, "M"; however, more than forty, the plants in Indianapolis and Gary included, are privately owned. There are marked "P." There are two owned by the Federal Government and they are marked "F."

Sewer Systems and Sewage Treatment Plants, 1941 publication of the Cincinnati Station of the United States Public Health Service,

contains information on the estimated number of people in Indiana who were served by sewers in 1940 and on the places which had sewage treatment plants. The breakdown of data in the pamphlet on sewage treatment plants is very complete. Included are such items as: the date each plant was built, the estimated population the plant was designed to serve, the type of treatment employed. In our tabulation the degree of treatment which is used in the various municipalities is not indicated in the list. The mark "X" is used to designate those places which have treatment plants, regardless of whether it is complete or totally inadequate and makeshift.

The last nine columns in the table give a bird's-eye view of the financial condition of each incorporated place in the state. The tax rates for municipalities, such as Indianapolis, which are situated in more than one township, were compiled in the following manner: The total over-all tax levy and the net assessed valuation of taxables were determined for each of the several parts of a given corporation according to the township in which it is situated. The respective levies and valuations were then combined. The total given for each multi-township city or town is the quotient resulting from dividing such composite levies by the corresponding composite valuations. Fortunately, in only a compartively few places was it necessary to calculate these synthetic rates. The figures on the net assessed valuation and the tax rates in each city and town were taken from the as yet unpublished reports in the office of the State Auditor. The amount of the debt liability of each city or town was copied from data compiled in the office of the State Statistician. It should be pointed out that the debts listed may not be the only local debt obligations resting on the taxpayers or property within these municipal corporations. County, civil township, and, especially in towns, school township debts may rest pro rata upon cities and towns; and in addition, Barret law bonds are still outstanding against property in many municipal corporations.

KEY TO THE SYMBOLS AND LETTERS USED IN THE FOLLOWING TABLES

1. Cities and towns are listed together in their alphabetical order. Cities are designated by placing after each the number of the class to which it belongs. All places having no numbers are towns.
2. There are some towns about which no information is available except that they are reported in the State Auditor's office as having an assessed valuation and a tax rate. There are also unincorporated places which, according to information from the State Board of Health, have public water supplies. These places are ommitted from their positions in the alphabetical order and placed at the bottom of the page. A dagger (†) indicates the position in the list where one would have appeared if the normal amount of information were available, or if they were incorporated.
3. In the column under WATER SUPPLY labeled SOURCE "G" indicates ground water supply and "S" surface water supply.
4. In the column labeled TREATMENT under WATER SUPPLY and also in the column SEWAGE TREATMENT the mark "X" is used to indicate that the municipality has some form of treatment. This does not indicate the quality of treatment for either water or sewage.
5. In the column labeled OWNERSHIP under water supply the mark "M" refers to municipal ownership; "P" refers to private ownership; and "F" refers to federal ownership of water-works plants.
6. Valuations and tax rates are those fixed in 1941, upon which taxes were collected in 1942. These were the latest published figures when the material was prepared.
7. All debts of the cities and towns except the school debts are as of December 31, 1942; the school debts are as of July 31, 1943.

City or Town	County	Population 1940	Population 1930	Water Supply			Estimated Population Served by Sewers in 1940	Sewage Treatment Plant	Net Assessed Valuation for 1942	Tax Rate for 1942	City Debts			Town Debts			
				Source	Treatment	Ownership					Revenue and Special Taxing District Bonds	General Obligation Bonds	School Bonds	Municipal Utility Bonds		Other Bonded Indebtedness	School Bonds
														Payable from Revenue	General Obligation		
Advance	Boone	365	358						260,590	1.92							
Akron	Fulton	990	932	G		M	450		885,890	2.02							
Aladdin	Madison	17	28						251,390	2.09							
Alamo	Montgomery	155	163						32,385	2.44							
Albany	Delaware	1623	1413	G	X	M	650		1,116,405	3.22				37,000		3,000	5,000
Albion	Noble	1234	1108	G		M	800		870,010	2.20				40,000			
Alexandria 5	Madison	4801	4408	G	X	M	3400		2,516,495	3.82		37,119.67	42,500				
Alfordsville	Daviess	106	90						32,740	2.64							
Alton	Crawford	78	109						20,310	3.15							
Altona	DeKalb	340	342						175,890	1.88							

Ambia	Benton	603	433	G		M	375		250,990	2.64						
Amboy	Miami	450	431						246,520	2.85						
Amo	Hendricks	288	278						228,990	2.24						
Anderson 2	Madison	41572	39804	G	X	M	39500	X	38,895,510	2.80	1,170,000	362,100.50	387,000			
Andrews	Huntington	954	883	G :S	X	M	300		476,500	2.88				16,500		2,000
Angola 5	Steuben	3141	2665	G	X	M	2400	X	3,344,180	2.92	54,000	30,500	28,000			
Arcadia	Hamilton	968	912	G		M	410		508,490	2.66					5,500	1,500
Argos	Marshall	1190	1211	G	X	M	600		781,255	2.26				134,000		
Ashley	DeKalb-Steuben	675	623	G		M			336,610	2.989				23,000		920
Atlanta	Hamilton	479	551						205,580	2.66						
Attica 5	Fountain	3760	3700	G		M	2500		2,511,270	3.24		27,500				
Auburn 5	DeKalb	5415	5088	G	X	M	5000	X	5,090,580	2.24	77,500		19,571			
Aurora 5†	Dearborn	4828	4386	S	X	P	2200		2,781,740	2.56		17,500	33,000			
Avilla	Noble	534	559	G		M	400		337,990	1.94						
Bainbridge	Putnam	414	406						198,754	2.20						
Bargersville	Johnson	297	282	G	X	M			197,400	1.32					7,000	
Batesville 5	Ripley	3065	2838	S	X	M	2000	X	2,561,172	2.80	98,250	30,500	24,645			
Battleground	Tippecanoe	506	448	G	X	M			337,245	2.21					2,450	9,286
Bedford 4	Lawrence	12514	13208	S	X	M	11300	X	9,250,175	3.26	24,000	5,500	23,450			
Beech Grove 5	Marion	3907	3552	G :S			3200	X	3,761,110	2.932	11,000	45,941.92	24,000			
Berne	Adams	2075	1883	G		M	1400		2,077,752	2.64						18,200
Bicknell 5	Knox	5110	5212	G	X	M	1200		1,737,050	4.3185	119,500	24,500	27,000			
Birdseye	Dubois	370	366						122,510	2.66						
Bloomfield	Greene	2270	2298	G		P	1500	X	1,610,505	4.18						5,200
Bloomingdale	Parke	432	412						177,930	3.14						
Bloomington 3	Monroe	20870	18227	S	X	M	14000	X	17,422,085	3.156	577,000	425,000	42,000			
Blountsville	Henry	169	151						86,200	2.44						
Bluffton 5	Wells	5417	5074	G	X	M	4200	X	4,259,010	2.94	67,000	58,500	41,000			
Boonville 5	Warrick	4526	4208	G	X	M	2500		2,452,315	3.92	558,900	22,000	30,500			
Boston	Wayne	182	184						139,983	1.62						
Boswell	Benton	877	817	G	X	M	600		782,195	2.66				3,500		8,700
Bourbon	Marshall	1145	1193	G	X	P	1050		873,615	2.28						6,000
Bowling Green	Clay	219	257			(Not incorporated but listed in U.S. Census)										
Brazil 5	Clay	8126	8744	G	X	M	6000	X	4,583,225	3.843	47,650	37,950	84,800			
Bremen	Marshall	2179	2105	G		M	1470		1,669,875	2.33						
† Austin	Scott	650		S	X	P										

City or Town	County	Population 1940	Population 1930	Water Supply			Estimated Population Served by Sewers in 1940	Sewage Treatment Plant	Net Assessed Valuation for 1942	Tax Rate for 1942	City Debts			Town Debts			
				Source	Treatment	Ownership					Revenue and Special Taxing District Bonds	General Obligation Bonds	School Bonds	Municipal Utility Bonds		Other Bonded Indebtedness	School Bonds
														Payable from Revenue	General Obligation		
Bristol	Elkhart	694	699						639,196	2.44							
Bronson	Randolph	253	252						150,060	2.33							
Brook	Newton	888	815	G	X	M	700		596,850	3.18							
Brooklyn	Morgan	485	545						196,538	2.48				1,500			
Brooksburg	Jefferson	100	112						29,490	2.54							
Brookston	White	826	844	G		M	400		610,510	1.82				28,000		11,000	
Brookville	Franklin	2194	2148	G	X	M	1430		2,099,425	2.50							21,000
Brownsburg	Hendricks	1136	1042	G		M	800	X	821,000	2.48					10,500		
Brownstown	Jackson	1860	1758	G	X	P	300		1,062,460	2.58						9,500	9,000
Bryant	Jay	332	319						166,390	2.39							
Bunker Hill	Miami	561	528	G		M	200		358,700	3.46						4,500	
Burket	Kosciusko	216							124,247	1.93							
Burnettsville	White	436	402						262,180	2.34							
Butler	DeKalb	1794	1643	G		M	1000	X	1,298,200	2.88				1,500		7,000	8,000
Cadiz	Henry	182	165						60,730	2.09							
Cambridge City	Wayne	2207	2113	G	X	M	1500	X	1,909,536	2.66						2,000	6,800
Camden	Carroll	590	538	G		M	400		315,700	2.69					3,750	4,000	
Campellsburg	Washington	608	558						279,746	3.74						4,250	3,825
Cannelburg	Daviess	145	132						47,815	3.20							
Cannelton 5	Perry	2240	2265	G	X	M	1500		1,026,350	4.14	140,000	6,500					
Carbon	Clay	510	476						174,290	3.72							
Carlisle	Sullivan	874	852						502,210	3.86						5,500	
Carmel	Hamilton	771	682	G		M	350		579,780	2.66						12,400	5,000
Carthage	Rush	937	931	G		M	100		750,040	2.12				29,000	4,000		
Castleton	Marion	232	222						114,200	1.93							
Cayuga	Vermillion	1126	968	G	X	M	400		477,520	5.06				11,000		16,000	
Cedar Grove	Franklin	204	221						89,200	2.70							
Center Point	Clay	332	372						179,100	3.24							
Centerville	Wayne	1162	993	G		M	900		726,166	2.20				10,000	4,000		
Chalmers	White	475	510	G	X	M	300		345,670	2.00				30,000			

Charlestown	Clark	939	859	G	X	M		X	653,785	2.58				52,500		5,500		
Chesterfield	Madison	581	460	G		M			341,090	3.13				37,000				
Chesterton	Porter	2470	2231	G	X	P	1500		2,094,310	2.62								
Chrisney	Spencer	437	414						208,982	3.22						1,500		
Churubusco	Whitley	1122	1095	G		P	1000		798,350	1.90								
Cicero	Hamilton	943	933	G		M	800		392,460	2.86				14,000		4,500		
Clarks Hill	Tippecanoe	381	428	G	X	M			261,465	2.48				30,000				
Clarksville	Clark	2386	2243	G	X		1500		4,368,270	2.90						34,000	8,000	
Clay City	Clay	1117	1079				400		556,130	2.86								
Claypool	Kosciusko	423	382	G		M			266,935	3.04				7,000				
Claysburg	Clark	597	615	G	X				177,495	3.25								
Clayton	Hendricks	558	561						426,720	2.42								
Clear Lake	Steuben	65							491,525	1.92								
Clermont	Marion	465	448	G	X	M	150		319,990	2.62				37,500				
Clifford	Bartholmew	188	179						54,135	1.47								
Clinton 5	Vermillion	7092	7936	G	X	M	6000		3,061,355	4.40	57,000	32,000	31,000					
Cloverdale	Putnam	657	627	G	X	M			378,548	2.98				35,500				
Coatesville	Hendricks	377	434						403,690	2.22								
Colfax	Clinton	717	690	G		M	200		457,305	3.08				7,500				
Columbia City 5	Whitley	4219	3805	G		M	3600		4,175,970	2.32			16,000					
Columbus 4	Bartholomew	11738	9935	S	X	M	9000		13,712,040	2.27		127,000	126,000					
Connersville 4	Fayette	12898	12795	G		M	9800		10,626,300	2.74	45,000	6,000	3,000					
Converse	Miami	943	931	G		M	650		622,430	3.20						7,400		
Corunna	DeKalb	278	268						188,540	2.06								
Corydon	Harrison	1865	2009	S	X	M	2250	X	1,252,690	4.04				39,500	2,000			
Covington 5	Fountain	2096	2008	G	X	M	1000		815,070	3.26	5,500		3,000					
Crandall†	Harrison	146	132						64,325	2.71								
Crawfordsville 4	Montgomery	11089	10355	G	X	P	8000	X	10,054,695	2.92	84,000		115,000					
Cromwell	Noble	399	371	G		M	190		346,585	2.28								
Crothersville	Jackson	1169	979	G	X	M	800		368,460	3.03								
Crown Point 5	Lake	4643	4046	G	X	M	6000	X	4,225,220	3.60	72,000	46,000	70,000					
Crows Nest	Marion	112	79						693,630	1.08								
Culver	Marshall	1605	1502	G		M	200		1,125,230	2.38								
Cynthiana	Posey	535	556	G		M			262,018	3.64				6,500	4,500			
Dale	Spencer	763	770						391,077	3.20				40,000				
† Crane	Martin	2500				F												

City or Town	County	Population 1940	Population 1930	Water Supply			Estimated Population Served by Sewers in 1940	Sewage Treatment Plant	Net Assessed Valuation for 1942	Tax Rate for 1942	City Debts			Town Debts			
				Source	Treatment	Ownership					Revenue and Special Taxing District Bonds	General Obligation Bonds	School Bonds	Municipal Utility Bonds		Other Bonded Indebtedness	School Bonds
														Payable from Revenue	General Obligation		
Dana	Vermillion	845	859	G	X	M	300		577,180	3.90				10,000			
Danville	Hendricks	2093	1930	G		M	1600	X	1,807,490	2.24				4,000			
Darlington	Montgomery	683	690	G		P	470	X	386,335	1.94							
Decatur.5	Adams	5861	5156	G	X	M	4500		5,651,048	2.364	330,000	40,500	71,000				
Decker	Knox	466	468						132,760	3.74							
Delphi.5	Carroll	2213	1929	G	X	M	1200		1,790,930	2.07		2,000	48,700.				
Denver	Miami	483	472						238,045	2.28							
Dillsboro	Dearborn	558	502						466,400	2.50							
Dublin	Wayne	751	727	G		M			356,265	2.52				18,000	3,500		
Dugger	Sullivan	1406	1383	G	X	M			413,995	4.26				60,000			
Dune Acres	Porter	46	12	G		M			227,520	2.94						2,000	
Dunkirk 5	Blackford-Jay	2942	2583	G	X	M	1500		1,716,070	3.547		7,500	1,500				
Dunreith	Henry	187	160						140,030	1.98							
Dyer	Lake	976	672	G	X	M			1,273,410	3.16					12,500		
Earl Park	Benton	507	501	G		M	380		423,595	2.52						5,754	
East Chicago 2	Lake	54637	54784	S	X	M	51000		90,031,670	2.96	2,848,400	829,235.20	1,220,000				
East Gary	Lake	3401	2409	G	X	M	2000		2,262,430	3.502				74,000			9,000
East Germantown	Wayne	305	291						157,671	2.02							
Eaton	Delaware	1453	1273	G		M	640		654,155	2.95				6,000	16,500		
Economy	Wayne	251	212						132,505	2.66							
Edgewood	Madison	229		G	X	M			443,115	2.72							
Edinburg †	Bartholomew-Johnson	2466	2209	G		M	2000	X	1,696,315	2.908				84,000		25,485.76	19,000
Elberfeld	Warrick	520	546						319,610	2.82							
Elizabeth	Harrison	209	178						42,850	3.80							
Elizabethtown	Bartholomew	319	294						132,675	1.45							
† Edwardsport	Knox	1350		G	X	P											

Elkhart.3	Elkhart	33434	32949	G	X	M	2450		42,728,303	.852	1,030,000	26,000	300,900				
Ellettsville	Monroe	863	767	G	X	M	100		314,820	3.37					8,200	5,700	
Elnora	Daviess	799	856	G	X	M	250		349,320	3.20				34,000	3,500		
Elwood 4	Madison	10913	10685	G	X	M	10000		6,848,540	3.77	865,000	105,000	50,000				
English	Crawford	757	704	G		M			342,955	3.69							
Etna Green	Kosciusko	423	371	G		M	250		362,840	1.86						5,000	
Evansville.2	Vanderburgh	97062	102249	S	X	M	97000	X	121,478,160	3.153	1,384,000	1,331,000	1,079,500				
Fairmount	Grant	2382	2056	G	X	M	1030		1,006,600	3.44				11,000			23,000
Fairview Park	Vermillion	1074	1106						244,410	3.18							
Farmersburg	Sullivan	1005	993	G	X	M	300		412,780	4.56				47,000	5,000		
Farmland	Randolph	914	853	G		M			727,120	1.74							
Ferdinand	Dubois	990	846	S	X	M	250		374,990	2.34				9,000			300
Fishers Station	Hamilton	164	138						114,305	2.75							
Flora	Carroll	1468	1449	G	X	M	1000		1,298,450	2.58				14,000			
Fort Branch	Gibson	1552	1341	G	X	M	100		681,655	2.78						6,500	
Fortville	Hancock	1463	1289	G		M	1000		1,204,310	2.78							
Fort Wayne 2	Allen	118410	114946	S	X	M	102600	X	168,549,870	2.19	4,285,000	504,100	1,334,000				
Fountain City	Wayne	491	480						249,981	2.46							
Fowler	Benton	1903	1564	G	X	P	1200		1,783,525	2.38						11,500	
Fowlerton	Grant	255	204						141,230	2.10							
Francesville	Pulaski	804	712	G		M	150		519,915	3.55				25,500			
Francisco	Gibson	611	728						186,440	3.22							
Frankfort 4	Clinton	13706	12196	G	X	P	11000	X	10,747,330	3.12	378,000	74,500	172,000				
Franklin 5	Johnson	6264	5682	G	X	P	4000	X	5,754,670	2.85		32,000	81,000				
Frankton	Madison	824	829	G	X	M			484,410	2.579							
Fredericksburg †	Washington	205	216						114,941	2.77							
Fremont	Steuben	855	802	G		M			591,300	3.39				33,500			
French Lick	Orange	2042	2462	S		P	1500		1,274,470	3.78						500	8,500
Fulton	Fulton	373	397						225,490	2.66							
Galveston	Cass	735	666	G	X	M	400		452,230	2.60				10,500		8,600	
Garrett 5	DeKalb	4285	4428	G		M	4100		2,570,420	2.76		10,000	32,000				
Gary 2	Lake	111719	100426	S	X	P	88000	X	136,830,815	3.66	2,473,000	2,510,296.55	3,109,000				
Gas City 5	Grant	3488	3087	G	X	M	3000		632,560	3.40		7,000					
Gaston	Delaware	677	654	G	X	M	70		327,975	2.58				19,000			
Geneva	Adams	966	895	G		M	700		505,975	2.72				10,500		3,000	
† Freelandville	Knox			G		P											

City or Town	County	Population 1940	Population 1930	Water Supply			Estimated Population Served by Sewers in 1940	Sewage Treatment Plant	Net Assessed Valuation for 1942	Tax Rate for 1942	City Debts			Town Debts			
				Source	Treatment	Ownership					Revenue and Special Taxing District Bonds	General Obligation Bonds	School Bonds	Municipal Utility Bonds		Other Bonded Indebtedness	School Bonds
														Payable from Revenue	General Obligation		
Gentryville	Spencer	258	271						71,142	3.80							
Georgetown	Floyd	377	374						154,395	3.26							
Gimco City	Madison	22	15						127,960	1.96							
Glenwood	Fayette-Rush	338	374	G	X	M	130		246,865	2.528				21,500			
Goodland	Newton	1097	978	G	X	M			792,560	3.19				1,500		1,000	
Goshen 4	Elkhart	11375	10397	G		M	11000	X	12,120,017	2.76	501,000		110,000				
Gosport	Owen	729	722	G		M			303,861	3.82					4,500	9,500	
Grabill	Allen	288	276						298,620	1.95							
Grandview	Spencer	607	588						212,745	3.66							
Greencastle 5	Putnam	4872	4613	G	X	M	6300	X	3,838,398	2.72	483,500	4,500	12,544.15				
Greendale	Dearborn	1548	1050	G	X	M	500		17,855,650	1.106				28,000		50,500	70,512
Greenfield 5	Hancock	4821	4188	G		M	3500	X	3,753,370	2.34	31,000	15,000	28,500				
Greensboro	Henry	222	239						49,660	2.62							
Greensburg 5	Decatur	6065	5702	G	X	M	4500	X	5,178,945	2.90	317,000	70,500					
Greensfork	Wayne	413	333						231,437	2.10							
Greentown	Howard	1060	1021	G	X	P	500		635,220	2.48							
Greenville	Floyd	285	257						86,690	2.32							
Greenwood	Johnson	2499	2377	G	X	P	15000		2,068,790	2.80							
Griffin	Posey	386	208						156,337	2.66							
Griffith	Lake	2116	1176	G		M	1000		3,171,885	3.34						53,000	42,500
Hagerstown	Wayne	1638	1262	G		M	1200	X	1,506,629	2.48				13,000		15,300	19,866
Hamilton	Steuben	392	357						294,710	1.82							
Hamlet	Starke	519	418	G		M			474,625	3.40					9,000		
Hammond 2	Lake	70184	64560	S	X	M	55000	X	95,881,745	3.46	2,762,500	1,230,170	1,243,500				
Hanover	Jefferson	406	390	G		M			211,655	3.34				27,000			

Hardinsburg†	Washington	275	254						139,050	2.86							
Hartford City 5	Blackford	6946	6613	G	X	M	6200	X	4,938,477	2.68	56,000	15,000	34,200				
Hartsville	Bartholomew	318	342						74,685	2.92							
Haubstadt	Gibson	762	674	G	X	M			455,605	2.40				31,500			
Hazelton	Gibson	516	507	S		M			213,895	3.16							
Hebron	Porter	949	693	G		M	600		580,710	2.68							
Highland	Lake	2723	1553	G:S	X	M	1160	X	3,260,300	3.00				86,500	49,000		32,500
Highwoods	Marion	21	28						101,120	1.08							
Hillsboro	Fountain	516	448	G		M			277,010	2.64				25,000			
Hobart 5	Lake	7166	5787	S	X	P	3000		5,074,615	3.58		56,500	52,000				
Holland	Dubois	380	323	S	X	M			158,700	2.86				50,000			
Hope	Bartholomew	1046	1085	G		M	500		455,010	2.54				45,000		5,000	
Hudson	Steuben	437	431						228,450	2.551							
Huntingburg 5	Dubois	3816	3440	S	X	M	3000	X	1,859,410	2.14		3,002	8,181.50				
Huntington 4	Huntington	13903	13420	G	X	M	13000	X	15,322,340	2.65	52,000	89,000	83,000				
Hymera	Sullivan	1298	1152						246,040	4.78						400	
Indian Village	St. Joseph								37,750	2.44							
Indianapolis 1	Marion	386972	364161	G:S	X	P	370000	X	538,882,770	2.809	18,359,050	8,084,090.58	6,979,000				
Ingalls	Madison	442	430						188,230	2.11							
Jamestown	Boone	583	552	G		M	100		354,140	2.24					25,500		
Jasonville 5	Greene	3418	3536	G	X	M	1200	X	1,081,960	4.82	52,000	14,500	24,000				
Jasper	Dubois	5041	3905	S	X	M	3700		2,665,610	2.70	114,000	27,800	27,420				
Jeffersonville 4	Clark	11493	11946	G	X	P	9000		7,580,395	3.96	95,000	100,000	83,000				
Jonesboro	Grant	1791	1496	G		M	900		1,049,090	3.44				70,000		1,200	2,100
Jonesville	Bartholomew	181	162						96,345	1.83							
Judson	Parke	124	111						27,205	2.56							
Kempton	Tipton	403	469						232,090	1.36							
Kendallville 5	Noble	5431	5439	G	X	M	5000	X	6,061,345	1.84		12,000	71,000				
Kennard	Henry	522	440						220,820	2.32						1,900	
Kentland	Newton	1608	1355	G		M	1200		1,446,790	2.27					1,000	8,500	
Kewanna	Fulton	701	682	G		M	500		583,430	2.27							
Kingman	Fountain	549	502						223,570	3.40							
Kingsbury	LaPorte								169,012	2.82							
Kingsford Heights	LaPorte	10000		G	X	F											
Kirklin	Clinton	712	644	G		M	200		402,050	3.88					12,500	8,500	
† Harrison	Fayette								2,731,090	2.76							

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				Source	Treatment	Ownership					Revenue and Special Taxing District Bonds	General Obligation Bonds	School Bonds	Municipal Utility Bonds		Other Bonded Indebtedness	School Bonds
														Payable from Revenue	General Obligation		
Knightstown	Henry	2323	2209	G	X	M	1700		1,492,330	2.715							2,000
Knightsville	Clay	677	704						273,145	3.42							1,500
Knox	Starke	2165	1815	G		M	900		1,417,730	3.22						21,400	17,500
Kokomo 3	Howard	33795	32843	G	X	P	31500	X	31,285,885	3.48	279,000	407,500	351,500				
Kouts	Porter	732	583	G	X	M	275		596,790	2.85				26,500	8,500		
Laconia	Harrison	83	103						23,245	2.36							
LaCrosse	LaPorte	574	568						528,156	2.34							
Ladoga	Montgomery	936	829	G		M	700	X	391,705	2.64				30,000			
Lafayette 3	Tippecanoe	28798	26240	G	X	M	26000		34,507,455	2.19		165,000	139,500				
LaFontaine	Wabash	554	604	G		M	250		460,375	1.63							
Lagrange	Lagrange	1814	1640	G		M	800		1,565,050	2.90				14,500			
Lagro	Wabash	542	467						253,770	2.70							
Lakeland	LaPorte	1160							1,524,544	1.86							19,500
Lakeville	St. Joseph	567	522	G	X	M			339,100	2.62				22,000		1,000	
Lanesville	Harrison	267	273	G	X	M			96,230	3.14							
LaPaz	Marshall	429	375						237,050	2.32							
Lapel	Madison	1146	1140	G	X	M	680		478,145	2.45				29,500	8,000		
LaPorte 4	LaPorte	16180	15755	G	X	M	14000	X	21,002,992	2.74	328,000	33,750	85,000				
Larwill	Whitley	319	262						234,120	1.88							
Laurel	Franklin	533	516	G		M			143,230	3.72				2,000		18,681	
Lawrence	Marion	1087	840	G		M	500		726,170	2.26				30,500			
Lawrenceburg 5	Dearborn	4413	4072	G	X	M	2000	X	3,582,020	2.42	235,000	20,000	29,052				
Leavnworth	Crawford	394	418	G	X	M	400	X	104,290	4.19				23,850			
Lebanon 5	Boone	6529	6445	G	X	M	6000	X	5,350,570	2.48	307,500		10,000				
Leesburg	Kosciusko	389	371						292,435	2.56						2,375	
Lewisville	Henry	531	442	G		M			349,600	1.89							
Liberty	Union	1496	1241	G	X	M	1100		1,496,640	2.68							
Ligonier 5	Noble	2178	2064	G	X	M	1400		2,084,845	2.66	49,820	5,710	14,500				
Linden	Montgomery	580	541	G	X	M			242,045	3.60				44,500			
Linton 5	Greene	6263	5085	G	X	M	4500	X	2,270,560	4.14	178,000	6,000	53,356.63				

Little York	Washington	132	140						53,170	2.24							
Livonia	Washington	192	168						61,292	2.33							
Lizton	Hendricks	200	217						153,140	1.18							
Logansport 3	Cass	20177	18508	S	X	M	16000		18,713,000	1.74			242,500				
Long Beach	LaPorte	455	436	S	X	P			2,579,353	2.12						13,000	9,000
Loogootee 5	Martin	2325	2203	G	X	M	500		691,048	4.66	44,000	7,100	4,000				
Lowell	Lake	1448	1274	G		M			1,070,895	2.92						3,000	
Lynhurst	Marion	128	51						58,790	2.22							
Lynn	Randolph	1014	936	G		M			563,440	2.28							
Lynnville	Warrick	371	264						164,920	2.48							
Lyons	Greene	794	806	G	X	M			294,115	3.68				29,000			
Macy	Miami	275	279						164,225	2.01							
Madison 5	Jefferson	6923	6530	G	X	M	5250		4,127,630	3.66		26,500	47,500				
Marengo	Crawford	812	806	G		P			305,250	3.79							
Marion 3	Grant	26767	24496	G	X	M	23300	X	20,013,600	3.824	494,000	110,000	217,000				
Markle	Huntington-Wells	671	621	G	X	M	450		495,310	2.748							
Markleville	Madison	266	251						227,600	2.26							
Marshall	Parke	321	293	G	X	M			184,265	3.24				37,500			
Martinville 5	Morgan	5009	4962	G	X	M	3200		3,472,021	3.50	6,250	10,663	29,100				
Matthews	Grant	468	513						188,930	2.97							
Mauckport†	Harrison	154	203						30,100	2.53							
Medaryville	Pulaski	703	610	G		M	230		396,140	2.88				11,000		7,445.50	
Medora	Jackson	722	654	G	X	M			384,050	3.27				33,000			
Mellott	Fountain	302	312						111,320	3.34							
Mentone	Kosciusko	731	704	G		M	650		643,800	2.151							
Meridian Hills	Marion								1,774,670	1.18							
Merom	Sullivan	499	397						122,025	2.94							
Michigan City 3	LaPorte	26476	26735	S	X	M	20000	X	31,098,935	.62	640,000	358,500	391,000				
Michigantown	Clinton	417	419						220,470	1.66							
Middlebury	Elkhart	722	656	G		M			744,048	2.27							39,500
Middletown	Henry	1520	1348	G		M	1140		909,100	2.66							4,360.30
Milan	Ripley	1000	877	S	X	M	700	X	671,488	3.72					7,000	2,000	2,255.36
Milford	Decatur	130	152						16,980	2.14							
Milford	Kosciusko	901	869	G		M			646,709	2.10							
Millersburgh	Elkhart	384	344	G		M			321,775	2.66						15,700	
† Mecca	Parke	1000		G	X	M											

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														Payable from Revenue	General Obligation		
Millhousen	Decatur	180	162						75,805	1.86							
Milltown	Crawford-Harrison	760	795	G	X	M			259,890	4.667				41,000		2,204	2,725
Milton	Wayne	646	612	G	X	M			285,752	2.96				7,500	8,550		
Mishawaka 3	St. Joseph	28298	28630	G	X	M	24500		29,024,640	2.44	40,000	163,605.52	90,000				
Mitchell 5	Lawrence	3393	3226	S	X	M	2500	X	1,459,305	4.54	115,500	6,465.79	15,000				
Modoc	Randolph	237	236						171,510	2.436							
Monon	White	1262	1374	G	X	M	1000		894,250	2.28				14,000			
Monroe	Adams	405	322						205,425	1.722							
Monroe City	Knox	518	544						130,710	4.00							
Monroeville	Allen	994	897	G		M	530		632,030	2.21				21,000	6,000		
Monterey	Pulaski	288	283						217,400	2.92							
Montezuma	Parke	1366	1292	G		M	300		407,330	2.839				9,000	8,000		
Montgomery	Daviess	510	445						99,115	3.96							
Monticello 5	White	3153	2331	G		M	1000		2,835,390	2.46			70,000				
Montpelier 5	Blackford	1800	1859	S	X	P	1100		1,052,573	2.98			12,000				
Moorefield	Switzerland	79	84						32,340	3.06							
Mooreland	Henry	496	384						244,590	2.93							
Moores Hill	Dearborn	359	349						133,350	2.88							
Mooresville	Morgan	1979	1910	G	X	P	1300	X	943,617	3.56						3,000	20,195
Morgantown	Morgan	724	748	G	X	M	400		332,965	3.88				13,800	9,800		
Morocco	Newton	1151	1006	G	X	M			633,410	2.85				24,500			
Morristown	Shelby	665	608	G		M	100		441,445	2.58				4,000	7,000		
Mount Auburn	Wayne	145	161						75,118	2.14							
Mount Ayr	Newton	207	216						73,930	2.60							
Mount Carmel	Franklin	120	150						40,620	2.46							
Mount Etna	Huntington	139	135						48,330	1.901							
Mount Summit	Henry	265	274	G		M			152,040	2.30						2,100	
Mount Vernon 5	Posey	5638	5035	S	X	M	4200		2,086,656	3.96	251,000		42,500				
Muncie 2	Delaware	49720	46548	G	X	P	35000	X	49,209,650	3.16	946,000	786,925.16	700,000				
Munster	Lake	1751	975	S	X	M			3,726,395	3.22				77,000		43,000	50,500

Nappanee 5	Elkhart	3028	2957	G		M	2200		2,853,707	2.847	20,000	31,741.46	32,000				
Nashville	Brown	493	369						230,060	4.07							
New Albany 3	Floyd	25414	25819	S	X	P	17850		18,524,290	3.14		155,000	291,700				
New Amsterdam	Harrison	86	101						22,025	2.78							
Newberry	Greene	360	366						134,320	3.74							
Newburg	Warrick	1374	1262	G	X	P	200		579,210	3.36							
New Carlisle	St. Joseph	747	718	G		M			744,540	1.74					13,000		
New Castle 4	Henry	16620	14027	G	X	M	13000	X	14,926,800	2.71	212,000	44,174.35	131,000				
New Chicago	Lake	466	481						269,590	3.24							
New Harmony	Posey	1390	1022	G		M			622,061	3.52				24,000	3,500		2,250
New Haven	Allen	1872	1702	G		M	1500	X	1,804,680	1.16				32,780		3,600	
New Market	Montgmery	323	330	G		M			164,450	2.89				15,500			
New Middletown	Harrison	115	118						31,140	3.30							
New Palestine	Hancock	448	456	G		P	100		419,290	2.28							
New Pekin	Washington	434	383	...					306,529	3.215							2,200
Newpoint	Decatur	328	342						160,810	2.06							
Newport	Vermillion	795	777						305,865	3.36							
New Providence	Clark	392	358						206,800	2.29							
New Richmond	Montgomery	368	391	G	X	M			236,090	2.94				27,000			
New Ross	Montgomery	355	350						157,435	2.00							
Newtown	Fountain	293	264						139,530	3.26							
Noblesville 5	Hamilton	5575	4811	G	X	P	3900		4,826,175	3.16		18,500	10,500				
North Crows Nest	Marion								180,040	1.08							
North Grove	Miami	96	119						65,280	1.79							
North Judson	Starke	1408	1348	G		M			1,147,940	2.68				3,000		5,600	
North Liberty	St. Joseph	978	823	G		M			629,790	2.86						300	
North Madison	Jefferson	316	573						144,950	2.68							
North Manchester	Wabash	3170	2765	G		M	2400		3,155,010	2.50						500	1,000
North Salem	Hendricks	511	466	G	X	M	50		304,030	2.96				22,000			
North Vernon 5	Jennings	3112	2989	S	X	M	2500	X	2,013,530	3.88	35,000	26,500	20,000				
North Webster	Kosciusko	343							258,634	2.44							
Oakland City	Gibson	3068	2842	S	X	M	2700	X	1,369,015	3.16				58,700			22,288
Oaktown	Knox	793	771						312,710	3.18				45,000		3,980	
Odon	Daviess	958	981	G	X	M			577,695	4.36				36,200			22,140
Ogden Dunes	Porter	144	50						367,330	3.00							

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														Payable from Revenue	General Obligation		
Oldenburg	Franklin	533	575	S	X	M	300	X	141,260	2.64				21,500			
Onward	Cass	127	135						118,920	1.66							
Oolitic	Lawrence	1186	1210	S	X	M	600		268,365	3.40					6,000		
Orestes	Madison	412	357						160,035	2.86							
Orland	Steuben	307	310						206,000	3.00						1,250	
Orleans	Orange	1428	1422	G	X	M	1200	X	941,245	3.44				39,500			500
Osceola	St. Joseph	498	432						380,650	1.52							
Osgood	Ripley	1198	1173	S	X	M	1000	X	778,604	3.10				60,000		14,650	
Ossian	Wells	784	788	G		M	500		536,600	2.89				17,000	6,000		
Otterbien	Benton	570	616	G		M	450		460,855	2.14							
Owensville	Gibson	1188	1056	G	X	M	75		448,600	2.78				35,000			
Oxford	Benton	863	853	G	X	M	750		598,305	2.88					17,750		
Palmyra	Harrison	274	288						102,360	2.22							
Paoli	Orange	2218	2016	S	X	M	800		1,012,755	3.94					4,000		3,000
Paragon	Morgan	454	366						168,669	2.80				12,000			
Parker City	Randolph	786	794	G	X	M	550		550,810	2.30					12,500	4,800	
Patoka	Gibson	569	634	G		M			229,230	2.96				11,000			
Patriot†	Switzerland	257	288						87,760	4.68						500	6,660.64
Pendleton	Madison	1681	1538	G	X	M			1,371,385	2.43				68,000			17,000
Pennville	Jay	598	578	G		M			300,031	3.14				15,500			
Perrysville	Vermillion	451	435						150,425	3.28							
Peru 4	Miami	12432	12730	G	X	M	10000	X	11,128,495	2.16	252,210	6,474.31	122,428				
Petersburg 5	Pike	3075	2609	S	X	M	2000	X	1,320,430	4.72	25,000		2,000				
Pierceton	Kosciusko	895	878	G		M	100		598,062	2.04							
Pine Village	Warren	303	323						127,310	2.94							
† Pence	Warren	125		G	X	P											

Pittsboro	Hendricks	510	489	G	X	M			344,410	1.94				19,970	2,500		
Plainfield	Hendricks	1811	1617	G	X	M	1400		1,215,580	2.60				22,000			
Plainville	Daviess	619	603						272,780	2.52							
Plymouth 5	Marshall	5713	5290	G		M	4500		4,884,055	2.92	59,000	33,900	32,000				
Poneto	Wells	270	237						94,040	2.61							
Porter	Porter	1190	805	G	X				1,343,390	2.36						6,299	
Portland 5	Jay	6362	5276	G	X	M	4200		4,172,721	2.63		9,250	23,000				
Poseyville	Posey	948	810	G	X	M			452,835	3.42				12,500			
Pottowattomie Park	Steuben								88,556	2.52							
Princeton 5	Gibson	7786	7505	G	X	M	6600	X	5,422,905	2.82	567,000	14,000	51,000				
Ravenswood	Marion	394	128						191,570	2.28							
Redkey	Jay	1538	1370	G		M	150		1,007,048	2.70							
Remington	Jasper	869	879	G		M	650		730,660	2.27							
Rensselaer 5	Jasper	3214	2798	G	X	M	2200		3,026,480	2.67	65,000	29,500	44,450				
Reynolds	White	408	362	G	X	M			292,900	3.24							
Richmond 2	Wayne	35147	32493	G:S	X	P	28000	X	36,622,248	2.38		509,000	522,500				
Ridgeview Homes	Jackson																
Ridgeview	Miami	439	483						553,835	2.03							
Ridgeville	Randolph	1003	909	G		M	202		585,500	2.51							
Riley†	Vigo	287	260						153,860	3.04							
Rising Sun 5	Ohio	1545	1379	G		M			868,200	3.82	147,000	4,500	3,482.55				
Roachdale	Putnam	736	631	G	X	M	350		344,224	2.62				18,000			
Roann	Wabash	429	395	G		M	100		308,450	2.64					3,600		
Roanoke	Huntington	808	849	G	X	M	210		553,980	2.82				3,000		5,500	
Rochester 5	Fulton	3835	3518	G	X	M	2300	X	3,337,090	2.90	42,000	3,400	22,500				
Rockport 5	Spencer	2421	2396	G		P	1800		1,060,840	4.22			5,200				
Rockville	Parke	2208	1832	G		M	1200	X	1,560,065	3.26						26,000	24,000
Rocky Ripple	Marion	315	133						248,650	2.30							
Rosedale	Parke	712	657						281,700	2.92							
Roseland	St. Joseph	782	777						645,660	2.46						1,800	
Rossville	Clinton	627	626	G	X	M	300		415,955	2.56				34,000			
Royal Center	Cass	865	777	G		M	400		592,595	2.80				9,500			
Rushville 5	Rush	5960	5709	G	X	M	5100		5,205,060	2.36	3,000		14,000				
Russellville†	Putnam	380	411						236,779	2.38							
St. Joe	DeKalb	437	407						272,150	2.02							
† Riley Beach	Kosciusko	50		G		P											
† Russiaville	Howard	850		G		P											

City or Town	County	Population 1940	Population 1930	Water Supply			Estimated Population Served by Sewers in 1940	Sewage Treatment Plant	Net Assessed Valuation for 1942	Tax Rate for 1942	City Debts			Town Debts			
				Source	Treatment	Ownership					Revenue and Special Taxing District Bonds	General Obligation Bonds	School Bonds	Municipal Utility Bonds		Other Bonded Indebtedness	School Bonds
														Payable from Revenue	General Obligation		
St. John	Lake	383	332	G	X	M			365,380	3.82				55,000		3,750	
St. Leon	Dearborn	276	276						129,120	1.99							
St. Paul	Decatur-Shelbey	695	678						359,825	2.11							
Salamonia	Jay	191	180						105,646	2.51							
Salem 5	Washington	3194	3194	G	X	M	2000	X	2,187,525	2.96	35,000	9,000					
Saltillo	Washington	125	160						57,496	2.44							
Sandborn	Knox	602	641						298,590	2.36							
Saratoga	Randolph	349	303						392,600	1.81							
Schererville	Lake	998	580	G		M			1,713,460	2.62					17,000	7,250	21,000
Schneider	Lake	283	264	G		M			292,370	3.72						2,763	
Scottsburg	Scott	2189	1702	G	X	M	2000	X	1,372,770	3.32				119,000		13,500	2,450
Seelyville	Vigo	807	825						337,480	2.68							
Sellersburg	Clark	1121	1050	G	X	M	900	X	431,975	3.96				50,000	9,500		
Selma	Delaware	424	344						257,065	1.99							
Seymour 5	Jackson	8620	7508	S	X	P	5100		6,680,600	2.98	8,500	84,500	81,500				
Sharpsville	Tipton	518	512						323,625	2.34						3,000	
Shelburn	Sullivan	1606	1548	G	X	M	750		400,760	4.66				56,000			
Shelbyville 4	Shelby	10791	10618	G	X	P	7000		10,526,710	2.82		37,200	166,000				
Sheridan	Hamilton	1720	1763	G	X	P	900		1,365,780	2.41							
Shipshewanna	Lagrange	286	262						275,740	2.81							
Shirley	Hancock-Henry	952	761	G	X	M	400		424,560	2.88							
Shirley City 5	Allen	471	473	G		M	400		387,860	2.19		3,000					
Shoals	Martin	1031	1128	G	X	M			344,561	4.12						500	4,223
Shooters Hill	Marion	19	11						84,850	1.08							
Shore Acres	Marion								61,040	1.08							

Sidney	Kosciusko	194	182						103,956	2.28							
Silver Lake	Kosciusko	471	442	G		M	200		300,538	2.74					500	3,900	
Somerville	Gibson	373	273						108,800	2.72							
South Bend 2†	St. Joseph	101268	104193	G	X	M	99000		148,306,970	2.80	952,000	2,875,000	964,000				
Southport	Marion	549	521						426,230	1.78							
South Whitley	Whitley	1118	1102	G		M	900		1,144,710	2.16						1,400	
Speedway	Marion	2325	1420	G		M	1000		10,957,220	2.02				109,000		51,000	45,500
Spencer	Owen	2375	2179	G	X	P	900		1,362,368	4.50							13,500
Spiceland	Henry	645	722	G		M	300		369,680	2.88				28,000			
Spring Grove	Wayne	237	191				45		126,274	2.76							
Spring Hills	Marion	28	22						173,020	1.08							
Spring Lake Park	Hancock	111	69						61,800	2.38							
Springport	Henry	189	183						66,540	2.86						117.50	
Spurgeon	Pike	360	375						139,330	3.50							
State Line City	Warren	157	165						91,300	2.48							
Staunton	Clay	387	482						119,380	3.22							
Stilesville	Hendricks	273	313						151,890	2.26							
Stinesville	Monroe	337	310						62,480	3.38							
Straughn	Henry	275	212						174,810	2.19							
Sullivan 5	Sullivan	5077	5306	G	X	P	3600	X	3,674,235	4.40		26,000	35,000				
Sulphur Springs	Henry	292	238						183,340	1.98							
Summitville	Madison	991	1017	G		P	800		452,525	3.64						3,000	
Sunman	Ripley	352	355						356,765	3.36							
Swayzee	Grant	661	604	G		M	300		457,200	3.16				34,500			
Switz City	Greene	405	450						169,915	3.384							
Syracuse	Kosciusko	1346	1190	G	X	M	900	X	1,156,570	2.26						17,500	
Tell City 5	Perry	5395	4873	G	X	M	3500		2,462,070	3.88	477,000	45,000	179,500				
Tennyson	Warrick	293	335						103,355	3.16							
Terre Haute 2	Vigo	62693	62810	S	X	P	41000		56,420,260	3.56	380,000	482,500	265,000				
Thorntown	Boone	1226	1325	G		M	800		617,310	2.74							
Tipton 5	Tipton	5101	4861	G	X	M	4000	X	3,246,580	2.80	178,000	7,000	32,500				
Topeka	Lagrange	496	489	G	X	M	150		439,470	2.534						1,000	
Trail Creek	LaPorte	326	295						344,385	1.903							
Troy	Perry	599	562						150,930	3.40						400	
Ulen	Boone	99	74						240,830	2.26							
† South Peru	Miami								328,020	2.17							

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														Municipal Utility Bonds			
				Source	Treatment	Ownership					Revenue and Special Taxing District Bonds	General Obligation Bonds	School Bonds	Payable from Revenue	General Obligation	Other Bonded Indebtedness	School Bonds
Union City 5	Randolph	3535	3084	G	X	M	2600	X	3,482,290	2.68	44,500	23,000	5,200				
Uniondale	Wells	301	226						214,880	2.61							
Universal	Vermillion	603	642						103,100	3.36							
Upland	Grant	900	906	G		M	180		526,410	3.04							
Valparaiso 5	Porter	8736	8079	G:S	X	M	7500		7,164,810	3.50	168,000	111,000	16,500				
VanBuren	Grant	825	766	G		M	80		459,740	3.41				6,000		1,750	
Veedersburg	Fountain	1781	1606	G	X	M	400	X	663,970	3.46						1,200	3,500
Vera Cruz	Wells	142	94						29,190	1.90							
Vernon†	Jennings	413	410	S	X		100		129,705	2.84							
Versailles	Ripley	582	523	S	X	M	500	X	333,413	3.68						3,000	
Vevay	Switzerland	1209	1183	G	X	M			630,470	5.36				103,000		10,500	9,000
Vincennes 4	Knox	18228	17564	S	X	M	14500		12,475,200	4.78	1,288,500	332,204.08	201,500				
Wabash 5	Wabash	9653	8840	G	X	P	8500		9,353,320	2.98		24,577.50	60,000				
Wakarusa	Elkhart	1033	973	G		M	500		1,031,690	2.17							
Walkerton	St. Joseph	1178	1137	G	X	M	900		923,610	3.10							36,500
Wallace	Fountain	123	128						41,730	1.96							
Walton	Cass	710	685	G	X	M	250		529,165	2.28				47,500		2,500	
Warren	Huntington	1388	1177	G		M	1050		722,680	2.28				20,000			
Warren Park	Marion	237	164						173,560	1.44							
Warsaw 5	Kosciusko	6378	5730	S	X	P	5200		7,021,906	2.26		12,000	86,000				
Washington	Daviess	9312	9070	G:S	X	M	6500		5,894,875	3.14	579,000	80,000					
Waterloo	DeKalb	1257	1244	G		P	1000	X	904,900	2.94							29,530
Waveland†	Montgomery	530	542	G	X	M			250,030	3.50				39,500		1,100	
Waynetown	Montgomery	644	664						373,255	2.00							
West Baden	Orange	949	1174	S	X	P	650		526,370	3.88							13,500
† Vernon Acres	Marion	100		G		P											
† Waynedale	Allen	2200		G	X	P											

W. College Corner..	Union	454	437	G		M			445,860	2.08				9,000	7,500		
Westfield	Hamilton	709	688	G		M	200		305,480	3.57				32,500	4,500		
West Harrison	Dearborn	311	279	G	X	P			257,250	2.12							
West Lafayette 5	Tippecanoe	6270	5095	G		P	13000		9,063,315	2.61		59,000	86,500				
West Lebanon	Warren	581	595	G	X	M	325		299,970	3.40				19,000		3,200	
Westport	Decatur	644	637						368,115	2.88							
West Terre Haute †	Vigo	3729	3588	G	X	M			1,088,770	3.48				39,000			
Westville	LaPorte	523	496	G		M			296,772	2.78					4,500	10,500	
Wheatfield	Jasper	439	401						193,140	2.71							
Wheatland	Knox	713	806						292,090	2.72							
Whiteland	Johnson	403	419						201,340	2.15							
Whitewater	Wayne	114	121						48,980	1.94							
Whiting 4	Lake	10307	10880	S	X	M	10500		24,641,830	2.70		100,000	82,000				
Wilkinson	Hancock	336	316						247,390	2.37							
Williams Creek	Marion	119							736,370	1.62							
Williamsport	Warren	1222	1053	G		M	800	X	585,790	2.86				34,000		477.50	
Winamac	Pulaski	1835	1679	G		M	1200		1,674,160	2.38						2,000	
Winchester 5	Randolph	5303	4487	G		P	3800	X	4,512,200	2.70		36,500					
Windfall City	Tipton	835	734	G	X	M	100		538,000	2.348				45,000		6,000	
Wingate	Montgomery	380	408						238,120	2.62							
Winona Lake	Kosciusko	743	454	S	X		450	X	1,170,302	2.14						9,500	
Winslow	Pike	1382	1175	S	X	M	600		515,535	4.30						11,300	
Wolcott	White	736	747	S	X	M	350		563,760	2.02					1,000		
Wolcottville‡	Noble-Lagrange	612	646	G		M			558,185	2.572							
Woodlawn Heights...	Madison	59	19						99,005	2.09							
Woodruff Place	Marion	1434	1216	G	S				1,592,290	2.44							
Woodstock	Marion	30	28						181,410	1.08							
Worthington	Greene	1729	1687	G	X	P	800		911,075	3.40							30,500
Wynnedale	Marion	60							221,140	1.62						3,300	
Yoeman	Carroll	160	160						94,080	.99							
Yorktown	Delaware	906	909	G	X	M	670		536,265	2.22				31,000		1,200	
Zionsville	Boone	1314	1131	G	X	M	1250	X	829,650	2.74				51,000		11,000	
† West Shoals	Martin								132,227	4.11							

‡ Woodburn City, see Shirley City